

ON THE STATUS OF THE PREPOSITIONAL  
PHRASE IN TRANSFORMATIONAL GRAMMAR,  
WITH ESPECIAL REFERENCE TO GERMAN

J. Lachlan Mackenzie

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University of Edinburgh

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To my parents



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ABSTRACT

This study falls into two parts. The first part contains a comprehensive examination of the various proposals that have been made by previous scholars concerning the status of prepositional phrases in transformational generative grammar. The analysis of the prepositional phrase in the 'Standard Theory' and the 'Extended Standard Theory' is examined, as are the various counter-proposals put forward by Lakoff. Finally, a number of approaches, all of which are characterized by positing a common source for prepositional phrases and noun phrases, are submitted to critical appraisal. The second part, constituting the remainder of the study, draws upon the findings of the first in considering the advantages inherent in treating the preposition as a subtype of predicate and the implications of such an approach for a transformational grammar of German. Evidence of various kinds is adduced in support of this analysis, which is shown to offer interesting insights into the structure of the system of German prepositions. On this basis, an attempt is made to isolate the configurations of semantic structure that must be posited to account for all the different syntactic and semantic functions of the prepositional phrase. The notion of 'Satzglied' is also incorporated into the transformational framework. The study ends with a number of conclusions as to the status of the prepositional phrase in transformational grammar.

DECLARATION

I hereby declare that this thesis was written by me and that it is entirely my own work.

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## INTRODUCTION

### 0.1. Preliminary remarks

#### 0.1.1. Outline of the problem

##### 0.1.1.1. Primary and secondary categories

One of the major goals of present research in transformational generative grammar is to determine the minimal set of syntactic categories required for the description of natural languages. In particular, much attention has been given to the question whether the set of categories recognized in the surface structure of any one language L (henceforth the set of 'secondary categories' of L) coincides exactly with the set of 'primary categories', that is, those categories that must be distinguished at the deepest level of analysis of L.<sup>1</sup> Early work in transformational generative grammar, e.g. Bierwisch (1963), tended, implicitly rather than explicitly, to give a largely affirmative answer to that question; further probing into the relationships between syntactic categories has however shown that the set of primary categories in natural languages is smaller than that of secondary categories, although the degree to which this is so is a matter of considerable controversy. The most radical claims in this direction have prompted the formulation of the Universal Base

1. It should be noted that this distinction is not equivalent to the distinction drawn by Lyons (1968:274) between primary and secondary *grammatical* categories.



Hypothesis, particularly associated with the work of Emmon Bach (cf. Bach, 1968), which asserts that all languages, although differing markedly in the number and nature of categories recognized in surface structure, are very similar, if not identical, in underlying structure and that this common underlying structure may be characterized in terms of a highly circumscribed set of universal (primary) categories.

The arguments that have been put forward in support of a small and possibly universal set of primary categories have been designed to demonstrate that there exist such parallels between the syntactic behaviour of the members of categories normally regarded as distinct that a grammar relating the two secondary categories to one primary category would both explicitly capture a significant generalization and also be simpler in form. Thus, to take a wholly uncontroversial example, let us suppose that a grammar of German were to assign different primary categorial status to *gegenüber dem Bahnhof*, an example of the secondary category 'prepositional phrase', as against *dem Bahnhof gegenüber*, an example of the secondary category 'postpositional phrase', in such sentences as (1) and (2), where the two phrases are entirely synonymous and display identical syntagmatic relations with the remainder of the sentences:

- (1)   Gegenüber dem Bahnhof steht das Stadttheater.
- (2)   Dem Bahnhof gegenüber steht das Stadttheater.

Then that grammar would fail (a) to capture the syntactic parallelism and semantic equivalence of the constructions and (b) since the

same grammatical information would have to be given about both phrases, to meet the criterion of maximum simplicity, which requires that a grammar should not contain redundant specification of grammatical information.

Even in early transformational studies, the tacit assumption that there was, to a large degree, a one-to-one mapping between the set of primary categories and the set of secondary categories of a language L did not imply that every *instance* of a secondary category had, underlying it, an instance of the parallel primary category. According to the grammar of German in Bierwisch (1963), for example, the surface-structure prepositional phrase *von Hans* in (3):

(3) Ich lief von Hans zu Peter.

is also represented in deep structure as a prepositional phrase, whereas the same syntagm in (4):

(4) Peter wurde von Hans erschlagen.

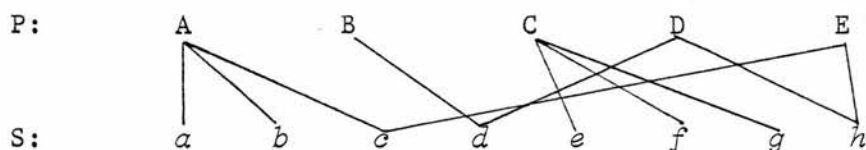
is argued to be transformationally derived from a deep-structure noun phrase.

There is, however, considerable evidence to support the claim that the mapping relations between surface-structure prepositional phrases and the underlying configurations from which they are transformationally derived are considerably more complex than those posited in earlier research; the aim of this study is to examine

critically the various proposals that have been put forward concerning these mapping relations, to adduce evidence for the approach which gives the most revealing account of the syntactic phenomenon 'the prepositional phrase' and to apply the favoured analysis to a discussion of prepositional constructions in German.

My ultimate purpose will therefore be to determine the 'status' of the prepositional phrase in transformational grammar generally and in a grammar of German in particular. By the 'status' of a secondary category I refer to the relative position of that category within the set of secondary categories of which it is a member, as determined by the mapping relations between the sets of primary and secondary categories. To clarify this point, let us assume a set of primary categories  $P = (A, B, C, D, E)$  and a set of secondary categories  $S = (a, b, c, d, e, f, g, h)$  and mapping relations between the members of these sets, represented diagrammatically as follows:

Figure 1



The mapping relations exemplified in Figure 1 have important consequences for both P and S, in that the most revealing representation of these sets is no longer in terms of unordered class-membership. Thus, within S, for example, the members of the subset  $(a, b, c)$  are linked by virtue of their common relation with A;  $(c, h)$  are connected through E;  $(a, b, e, f, g)$ , however, have no link with h.

The 'status' of any member of S is a function of the relationship holding between that member and all other members of S by virtue of the structuring imposed upon S by the mapping relations between P and S. Thus the status of *c* is a function of (i) sharing the same mapping relation to A as *a* and *b*, (ii) sharing the same mapping relation to E as *h*, and (iii) sharing no mapping relations with *d, e, f* and *g*. Moreover, all the members of the subset (*e, f, g*) have 'equivalent status' within the set S, since each is involved in one mapping relation only and with one primary category only, namely C. In more concrete linguistic terms, if it can be shown, for example, that the category 'postpositional phrase' in German is transformationally derived from (mapped onto) the same set of primary categories as the category 'prepositional phrase', the necessary conclusion is that the two construction-types have equivalent status within a grammar of German.

#### 0.1.1.2. Uncontroversial assumptions

It is important, before progressing, to clarify certain largely uncontroversial assumptions that will be made throughout this study concerning the status of the prepositional phrase.

Firstly, it is clear that prepositional phrases (*in dem Haus, auf dem Berg, ausserhalb der Stadt,...*), postpositional phrases (*dem Bahnhof gegenüber, meiner Gesundheit halber, unserer Ansicht nach,...*), and 'ambipositional phrases' (*um Gottes willen, auf den Minister zu, um fünf Uhr herum,...*) all have equivalent status in German, i.e. are all derived from the same primary

category or categories: all three types of phrase have identical privilege of occurrence in the sentence, are subject to the same constituent re-ordering rules, share the property of exocentricity, and take the same type of pro-forms. The three construction-types must be distinguished in surface structure, however, according as the 'prepositional element' precedes, follows, or, as a discontinuous constituent, surrounds the noun phrase. In keeping with both traditional and transformational terminological practice, I shall retain 'prepositional phrase' (PP) as a cover-term for all three construction-types and use the term 'preposition' (P), despite its etymological origins, to refer to the particle immediately dominated by PP, and which may be semantically characterized as expressing a relationship of its sister noun phrase to another sentence-element outside the PP, whatever the positional relationship between that particle and the noun phrase may be.<sup>1</sup> I have decided not to adopt Vennemann's (1973) use of the neutral term 'adposition', since the ambiguity it is designed to obviate does not arise in the present study, which is not primarily concerned with the relative order of the 'adposition' and the noun phrase with which it occurs.

Secondly, it is important to note that the status of the PP is regarded by many grammarians as being closely bound up with that

1. For a discussion of several definitions of the preposition proposed by twentieth-century linguists, see López (1970:Ch. I).

of adverbial syntagms, although this is not a view that would be generally held, particularly by the proponents of 'case grammar' (see 3.3 below). The most frequently encountered position is that PPs represent a subclass of adverbials. This may be interpreted as a formal statement that all PPs are dominated in deep structure by an adverbial node, i.e.:

$$(5) \quad \text{Adv} \rightarrow \begin{Bmatrix} X \\ \text{PP} \\ Y \end{Bmatrix} \quad \begin{array}{l} \text{where X and Y are variables repre-} \\ \text{senting further possible expansions} \\ \text{of Adv} \end{array}$$

Rules such as (5) are found in the base rules for German proposed by Bierwisch (1963), McKay (1968), and Streadbeck and Grimshaw (1974). Alternatively, 'adverbial' may be employed as an expression outwith the formalism functioning as a cover-term for various nodes, including prepositional phrase, as in Chomsky (1965:101-106); it is in this latter sense that all future references to the term 'adverbial' in this study are to be understood. It is worth noting, however, that Steinitz (1969) has claimed, for German, that all adverbials are transformationally derived from underlying PPs and that there are no adverbial nodes in deep structure, an analysis which, she maintains, simplifies the grammar of adverbial forms and of such 'pure adverbs' as *oben*, *unten*, *vorne*, *hinten*, etc.

#### 0.1.1.3. The preposition in transformational grammar

It is not a little surprising, given the relative frequency of occurrence of prepositional constructions in a large number of

languages<sup>1</sup>, that their grammatical status has received comparatively little attention from transformational grammarians. In Jackendoff's words, 'people seem never to have taken prepositions seriously' (1973:345). In the mid-sixties, the most prevalent attitude to prepositional constructions, and indeed to adverbials in general, appears to have been one of puzzlement: Chomsky (1965:219) warns his reader that adverbials 'are a rich and relatively unexplored system' and that his own conclusions about them 'must be regarded as quite tentative'; Rosenbaum and Lochak (1966:15) confess that 'the nature of the procedure for introducing prepositions into the underlying structure has not yet been determined' (quoted by Nilsen, 1972:45). Even the advent of generative semantics, case grammar and lexicalism in the later sixties did little to improve understanding, so that Jacobs and Rosenbaum, in their textbook presentation of transformational grammar, were forced to admit that 'grammarians do not at the present time have an understanding of the way in which prepositional phrases are generated from deep structures' (1968:141).

1. By my own calculations, using the list of (one-word) prepositions in Quirk, Greenbaum, Leech and Svartvik (1972:301) and the rank list of word-frequencies in Kučera and Francis (1967), 15.57% of words in continuous English prose may be identified as prepositions. Employing the list of prepositions in Helbig and Buscha (1973:370-401) and the rank list in Meier (1964), I compute the frequency of occurrence of prepositions in contemporary German to be 12.55%.

There has been only partial alleviation of grammarians' puzzlement about the mechanisms for generating prepositional syntagms since Jacobs and Rosenbaum wrote these words, despite a somewhat greater preoccupation with the problems involved. As recently as 1974, Kilby could still justifiably claim that 'the problem of prepositions is still one of the most difficult and crucial, and has never been squarely faced in any transformational study' (Kilby, 1974:23). My hope is that this study may cast some light on what remains a centrally important, but still highly mysterious problem for transformational grammar.

#### 0.1.2. Prepositional usage

Most previous studies of prepositional constructions have been primarily concerned with questions of 'usage', i.e. with indicating, in a more or less prescriptive fashion, which preposition is the most appropriate in a given linguistic context.<sup>1</sup> These works aim either to offer assistance to the native speaker anxious to improve his control of stylistic nuance or, more frequently, to give the foreign learner an insight into the highly complex way in which the limited stock of prepositions in the language is used to cover a multitude of semantic possibilities.

1. The most comprehensive investigations of German prepositional usage are those of Schmitz (1964) and Freund (1971); see also the relevant sections of such grammars as Curme (1922), Brinkmann (1962), Griesbach and Schulz (1965), and Helbig and Buscha (1973).



It is a well-known fact that prepositional usage represents one of the most formidable stumbling-blocks for the learner of a foreign language. The difficulties he encounters may be ascribed to three fundamental factors:

- A. the purely mnemonic difficulties involved in recalling which preposition is 'required' by each member of the extensive sets of verbs, adjectives and nouns that may be linked to a dependent noun phrase by one specific preposition only, where the 'right choice', which can usually be motivated diachronically, must often appear quite arbitrary to the learner of the contemporary language: cf. the use of *um* in *Er lief um sein Leben* as against *Er kam ums Leben*;
- B. the 'multiple meaning' or 'polysemy' of most prepositions, i.e. the fact that several different meanings, some intuitively relatable to one another, others without any apparent 'natural' connection, may be expressed by one and the same preposition: Griesbach and Schulz (1965:246-247), for example, ascribe ten different meanings to *um* and eleven to *zu*;
- C. the learner's lack of familiarity with the idiosyncratic way in which the language he is seeking to acquire analyses external reality and, in particular, recognizes spatial relations between objects and temporal relations between situations; the structural principles underlying the prepositional system of the foreign language often cannot be readily correlated with those of his own native tongue.

The difficulties discussed under A will receive no attention in this study, since the realizations of such dependent or 'translative'<sup>1</sup> prepositions are too unsystematic to yield sufficiently general results in a synchronic investigation of this nature. They represent the outcome of a succession of heterogeneous metaphorical extensions made at several times in the historical development of the language, many of which are no longer reconstructible.<sup>2</sup> The status of those prepositional phrases in which such translative prepositions occur will however be dealt with in the discussion of 'prepositional objects' below (1.2.3).

1. This term has been given currency in discussions of German syntax by Heringer (1970:41).
2. Engelen (1975:112) suggests that translative prepositions are not merely meaningless function-words:

... in Fällen mit einem Unsinnswort wie *klumborgen* wie z.B.  
*Man hat mich darum klumborgt, ihm meinen Vortrag zu leihen.*  
*Wir haben sorgfältig über diesen Sachverhalt klumborgt.*  
*Das hat mich von der Teilnahme an dieser Sitzung klumborgt.*

wird man nicht umhin können, der Präposition -- es muss hinzugefügt werden: im Rahmen der jeweiligen Konstruktion -- einen semantischen Wert zuzugestehen, auch wenn dieser nicht leicht zu fassen ist und auch nicht unabhängig von der jeweiligen Umgebung ist.

As regards B, Bennett (1968, 1975) has shown convincingly that writers on English prepositional usage have tended to exaggerate the extent of prepositional polysemy, the apparent differences of meaning often being explicable in terms of the preposition's co-occurrence with the 'governed' noun phrase. He advocates a new approach to prepositional usage, involving a search for 'Gesamtbedeutungen'<sup>1</sup>, which are to be established independently of linguistic context and represented in terms of a limited set of semantic primes ('sememes'). 'Comparatively little componential analysis ... needs to be performed on the semological elements underlying English prepositions' (Bennett, 1968:168).

Bennett's strictures are no less applicable to the various published analyses of German prepositional usage, which could be much simplified and improved by the pruning away of spurious cases of polysemy. Griesbach and Schulz (1965:249-250), for example, distinguish fourteen different meanings of *von*. The following sentences contain instances of the various types of *von*-construction they recognize:

- (6a) Mein Freund kommt von Berlin.
- (6b) Der Brief ist von meinem Vater.

1. By using this term, Bennett draws a parallel between the method of analysis he is proposing and Jakobson's attempt (1936) to identify a 'general meaning' for each of the (surface) cases of Russian.

- (6c) Meine Wohnung liegt weit von der Universität.
- (6d) Von hier ab ist die Strasse gesperrt.
- (6e) Ich habe Ihren Brief vom 11. Mai dankend erhalten.
- (6f) Gestern hat mich ein junger Mann von 25 Jahren besucht.
- (6g) Von morgen ab arbeite ich bei einer anderen Firma.
- (6h-1) Das Land wurde von seinen Unterdrückern befreit.
- (6h-2) Sie rät mir von dieser Tätigkeit ab.
- (6j) Dieser Ring ist von Gold.
- (6k) Der Student wurde von einem berühmten Professor geprüft.
- (6l) Wir haben gestern ein Drama von Schiller gelesen.
- (6m) Die Kleider von Kindern muss man waschen können.
- (6n) Ich gab ihm von meinem Geld.
- (6o) Sie war ein Mädchen von schöner Gestalt.

These fourteen meanings may be reduced to a mere three when the denotation of the governed noun phrase (GNP) is distinguished from that of the preposition. Consider Table 1 (overleaf), which gives Griesbach and Schulz' list of meanings, partially re-ordered for convenience of presentation, and a re-analysis of these in terms of three more general notions, two semantic, SOURCE and DESCRIPTION, and one (morpho-)syntactic, GENITIVE-SUPPLETION.

Table 1

Example-sentence number	Griesbach and Schulz' definition	Re-definition
(6a)	LOKAL: Bewegung von einem Punkt her	SOURCE, where GNP denotes a point in space
(6c)	LOKAL: Entfernung	SOURCE, where GNP denotes a point in space in the context of a 'hypotheti- cal journey'
(6d)	LOKAL: Beginn einer Strecke	SOURCE, where GNP denotes a point in space in the context of an intended future journey
(6b)	LOKAL: Herkunft	SOURCE, where GNP denotes an animate being, non- agentive and not present in the immediate universe of discourse
(6h-1)	HERKUNFT	SOURCE, where GNP denotes an animate being, non- agentive and present in the immediate universe of discourse
(6h-2)	TRENNUNG	SOURCE, where denotatum of GNP is abstract

Table 1, continued

(6k)	URHEBER oder URSACHE vor allem bei PASSIV- BILDUNGEN	SOURCE, in a passive con- struction, where GNP denotes the agent
(6g)	TEMPORAL: Beginn eines Zeitraums	SOURCE, where GNP de- notes a point in time
(6j)	MATERIAL	SOURCE, where GNP de- notes an indefinite mass
(6n)	PARTITIV	SOURCE, where GNP de- notes a definite mass or a definite number of en- tities from which a se- lection (real or ab- stract) is made
(6e)	TEMPORAL: Datums- angabe	DESCRIPTION, where GNP denotes a calendar-date
(6f)	TEMPORAL: Alters- angabe	DESCRIPTION, where GNP denotes an animate being's age
(6o)	BESCHREIBUNG	DESCRIPTION, where GNP denotes a quality
(6l)	URHEBER statt des ATTRIBUTIVEN GENITIVS	GENITIVE-SUPPLETION, where GNP is a proper noun (optional)

Table 1, continued

(6m)	Statt GENITIV der Deklination ohne Artikel	GENITIVE-SUPPLETION, where GNP is indefinite (obligatory)
------	--	---

In Table 1, SOURCE is to be interpreted as analogous to the generalized notion of ablativity discussed by Anderson (1971:119 ff.); DESCRIPTION is a tentative label for the semantic role of *von* in such noun-dependent postmodifying PPs as occur in (6e), (6f), and (6o); GENITIVE-SUPPLETION indicates the use of a PP introduced by *von* as an alternative to an NP in the genitive case--in (6l) the use of *von* + NP is optional, in (6m) obligatory. By a 'hypothetical journey', I refer to the phenomenon that 'some locative sentences identify a location by indicating the journey that one would have to undertake in order to get there' (Bennett, 1975:36).

Finally, with relation to C, it will be argued below (Ch. V) that the set of German prepositions, or at least the central core of that set, the place-prepositions, constitutes a structured system organized according to principles that diverge in certain important respects from those underlying the system of English prepositions. I assume that this divergence may be responsible for many of the difficulties experienced by English-speaking learners of German (and *vice versa*), but this assumption will not be further examined here.

While it is conceivable that 'applied linguists' may be able to draw upon the findings of this study with a view to easing the language-learner's burden, it is not any part of my ambition to

make any contribution to tasks of that nature. My concern is solely with the theoretical problems of classifying PPs according to their general syntactic and semantic properties; as a result, both the content and the design of this study are markedly divergent from those of the majority of earlier treatments of prepositional constructions in German.

## 0.2. The model

The model of transformational grammar to be adopted in Chapter V, and towards which I shall be working in earlier chapters, is designed to reflect the realization that it is unjustifiable to divorce syntax from semantics, i.e. to state all syntactic processes without any reference to semantic considerations. There will thus be no distinction drawn between a semantic and a syntactic component of the grammar.<sup>1</sup> The view of language which underlies the model and motivates the conflation of syntax and semantics has much more in common with the old, but well-established definition of language as a complex system correlating form and meaning (or 'expression' and 'content' in the terminology of Hjelmslev, 1961:47 ff.) than with Chomsky's original account of language, which ignored meaning and focused attention on syntax, as a class of well-formed sentences. Language will thus here be regarded as a device which encodes an infinite set of cognitive patterns (messages) as an infinite set of phonologically interpretable

1. In the now largely played out polemic between interpretive and generative semanticists, I therefore tend to side with the latter.



structures (surface structures). This device is modelled as a finite, homogeneous set of transformational rules mapping (underlying) semantic structure into surface structure. The purpose of grammar is seen as describing, with maximal simplicity, the relation between language as a string of formatives and the messages encoded by language.

The grammar assigns to every sentence a representation of its semantic structure, which is intended as an unambiguous characterization of the cognitive content of the sentence. Only two types of 'primary category' are recognized: arguments, or entity-denoting primes, and predicates, which either ascribe properties to arguments or establish a semantic relation between them. The semantic representation will take the form of a constituent-structure tree-diagram, with argument-names and predicate-names as terminal elements, dominated by nodes indicating the primary category to which each of these elements belongs. In addition, it will be necessary to allow for the introduction of a small number of operators taking entire predications as their scope (see, in 5.3.1, the operators CONJ and UND).

I propose to structure the semantic representation according to the principles of constituency. There are several respects, however, in which dependency structure, as proposed by Tesnière (1959), and developed by Hays (1964), Robinson (1970) and Anderson (1971), is superior to constituent structure:

(a) Dependency trees make immediately explicit which element of an endocentric construction is the 'head' of that construction, i.e. the

constituent which has the same syntactic distribution as the entire construction, by having the head immediately dominate ('govern') the other constituents of the construction (the 'modifiers').<sup>1</sup>

(b) Dependency-trees have no non-terminal nodes, so that tree-pruning rules of the type argued by Ross (1967) to be necessary for constituent-structure trees are not required for dependency-trees.<sup>2</sup>

(c) The problem of determining the underlying word order of each language, which has caused so much controversy among constituent-structure grammarians, need not arise in dependency grammars, since dependency is the only relation determining the position of elements in the tree.

The decision not to use dependency structure is motivated by two considerations which override the advantages discussed above:

(a) It is unclear what the topmost node of a dependency-structure

1. Chomsky (1970), however, adds two rule-schemata to the base component of a constituent-structure grammar in order to constrain the phrase-structure rules in such a way as to make the head of every construction explicit. See also 1.3 below.

2. This point was first made by Robinson (1970). Anderson (1971:176), who posits an abstract underlying representation in dependency structure, does however introduce pruning rules analogous to those proposed by Ross: their function is to remove case-labels governing only case-labels.

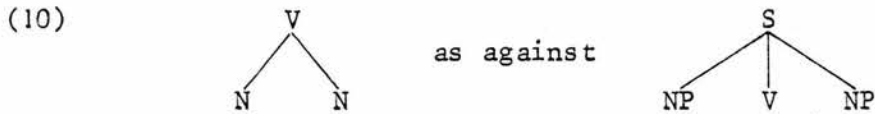
meaning representation should be. Since the sentence is an exocentric construction, in that its distribution is different from that of any of its constituents, it is impossible to talk of the 'head of a sentence', and therefore to determine what should appear at the top of the tree. Anderson (1975:44), following Robinson (1970), proposes a new definition of head which is designed to encompass both endocentric and exocentric constructions as 'une catégorie lexicale obligatoire qui [est] CARACTERISTIQUE de la construction en question. Par "caractéristique" on entend simplement qu'elle [la tête, JLM] sert à différencier cette construction des autres'. He claims, if I may modify his terminology, that this redefinition permits an analysis of the preposition as the head of the (exocentric) prepositional phrase on the grounds that it serves to differentiate PP from NP. This new definition of head gives no criterion, however, for identifying the head of a sentence. Consider (9), and an immediate-constituent analysis of it, (9a):

(9) Hans kam.

(9a)  $\left[ \left[ \left[ \text{Hans} \right]_{\text{N}} \right]_{\text{NP}} \left[ \left[ \text{kam} \right]_{\text{V}} \right]_{\text{VP}} \right]_{\text{S}}$

Any choice between the claim that NP is the head of the sentence since it distinguishes S from VP and the counterclaim that VP is the head since it distinguishes S from NP would be totally arbitrary. Anderson (1975:45) indeed states that it is still undetermined which element should be head of the sentence, although he specifically (Anderson, 1971, 1975) opts for V as head of the clause. In a dependency representation of the clause with V as head, he argues (1971:31), 'the essentially relational (notional) role of V is contrasted with the

basically 'thing'-referential N'. It is dubious, however, whether dependency can be said to give a clearer representation of 'relations' than constituency, i.e.



I also question whether it is justifiable to assert that verbs have an essentially relational role in view of the possibility of monadic verbs predicating properties of entities. Anderson's other argument for V as head of the clause (1971:31) is concerned with the relative facility with which the verb can be subcategorized in terms of its case frame, given such a structure. In as much as the motivation for V as head of the clause derives from the need to accommodate a facet of his model, Anderson cannot be said to have provided a solution that is definitive for all types of dependency grammar. Indeed, as long as it remains unclear what the topmost node of a dependency-grammar meaning representation should be, dependency grammars will compare unfavourably with constituent-structure grammars, at least in this respect.

(b) Dependency-trees give no expression to the important semantic notion of the 'scope' of a constituent,<sup>1</sup> which underlies the ambiguity of such sentences as (11) and (12):

(11) Alle Männer lieben eine Frau.

(12) Ich liebe dich nicht, weil du schön bist.

1. For a definition of logicians' use of the term 'scope', from which the grammatical use is derived, see Lyons (1977:152).

(11) has two readings, according as *eine* falls within the scope of *alle* ('Every man has a woman he loves') or *vice versa* ('All men love one and the same woman'). (12) is also two-ways ambiguous, according as the *weil*-clause falls within the scope of *nicht* ('It's not because you're beautiful that I love you') or not ('Because you're beautiful, I don't love you'). Negative elements, quantifiers, several types of subject-embedding predicate (*möglich sein*, *notwendig sein*, *schade sein*, ...), and, most importantly for this study, a large class of adverbials are all characterized by scope, i.e. by having a specific range of application. Whereas the notion of scope may be made explicit in constituent-structure trees in terms of command,<sup>1</sup> there is no mechanism in dependency structure to account for scope: subject-embedding predicates govern the node within their scope, whereas adverbials, negatives and quantifiers are 'modifiers' (i.e. not the head of the construction in which they appear) and are therefore governed by the node within their scope. There is thus no one-to-one relationship between dependency and scope.

### 0.3. Structure of the study

This study falls into two parts. The first, comprising Chapters I to III, contains a comprehensive examination of the various proposals that have been made concerning the status of the prepositional phrase in transformational grammar. Chapter I deals with the position of

1. If a node A commands a node B, A is in a higher clause than B; B is then said to be in the scope of A, if A is the type of node characterized by possessing a scope.

prepositional constructions in the 'Standard Theory' proposed in Chomsky (1965) and in the 'Extended Standard Theory' (Chomsky, 1971), with the associated  $\bar{X}$ -convention introduced by Chomsky (1970) and applied to prepositional phrases by Jackendoff (1973). Chapter II investigates the counter-proposals made by Lakoff (1965, 1968, 1970) to the Standard Theory account and also the various criticisms that have been voiced of these counter-proposals. Chapter III discusses a variety of approaches to the analysis of the prepositional phrase, all of which are characterized by positing a common source for PPs and NPs. The second part, constituting the remainder of the study, considers the advantages of treating prepositions as derived from underlying predicates and discusses the implications of such an approach for a transformational grammar of German. Chapter IV offers evidence of various kinds in support of the predicate-status of prepositions in semantic structure. Chapter V relates the findings of Chapter IV to the analysis of German prepositions and prepositional phrases. The principles underlying the systematic organization of the set of German place-prepositions are discussed; then, with reference to these principles, an attempt is made to isolate the various configurations of semantic structure that must be posited in order to account for all the different syntactic and semantic functions of prepositional phrases. The notion of the *Satzglied* (or 'sentence constituent') is integrated into the transformational framework: a distinction is drawn between prepositional phrases which are characterizable as *Satzglieder* and those which merely form part of a *Satzglied*.

The 'object language' from which the bulk of the data-sentences are drawn and to which the semantic representations proposed relate is Contemporary Standard German (CSG). It has proved impossible, particularly in Chapters I to III, to conduct the argumentation with sole reference to CSG, since the great majority of the hypotheses put forward in previous discussions of the syntax and semantics of prepositional constructions have been based on English as the source-language. In assessing the validity of these hypotheses, the only methodologically sound procedure is to evaluate their applicability to English, unless the specific claim is made that the hypotheses have universal validity. Fortunately, the syntactic structures of English and CSG do not differ sufficiently to prevent several of the points that I shall have to make from having relevance to an analysis of German. Indeed, many of the insights gained in Chapters I to III will be integrated into the argument in Chapter V.



## CHAPTER I

### THE PREPOSITIONAL PHRASE IN THE STANDARD AND EXTENDED STANDARD THEORIES

#### 1.1. Description of the *Aspects* model

Chomsky (1965) presents a model of transformational grammar which has come to be known, at his own suggestion (1971:185), as the 'Standard Theory'. It has been described so frequently that I shall restrict myself to giving a brief outline of its structure. It is a tripartite model, comprising a syntactic, a semantic and a phonological component. The syntactic component is made up of a 'base' and a set of transformational rules. The base is composed of a finite set of recursive context-free rewrite rules (the 'categorial component'), a finite set of context-sensitive 'strict subcategorization rules', a lexicon, which is a comprehensive list of the morphemes of the language in the form of an unordered set of lexical entries, and a lexical insertion rule. The output generated by this base, the 'deep structure', is a labelled phrase-marker to whose terminal symbols appropriate morphemes have been attached by the lexical insertion rule; it functions as input to (a) the semantic component, which assigns an interpretation or 'reading' to the deep structure and (b) the transformational rules, which map the deep structure into a succession of phrase-markers until the final phrase-marker is reached, the 'surface structure'. The phonological component interprets the string of morphemes in the surface structure as a phonetic representation.

The function of the categorial component is to delimit the set



of possible configurations of syntactic categories in deep structure. Thus, for example, the rules for English specify that, in deep structure, all verbs must have a subject, but not that all verbs have an object, i.e. a verb may be either transitive or intransitive. The role of the strict subcategorization rules is to ensure that the morphemes which are selected from the lexicon for insertion under noun (N) or verb (V) are of the appropriate subcategory for the syntactic context: a verb which may be only intransitive, for example, is thereby prevented from being inserted into a tree with an NP in object position. The strict subcategorization rules achieve this function by assigning contextual features to the category N or V, thereby creating a 'complex symbol'; the lexical entry for any morpheme to be introduced under either of these nodes must contain contextual features that correspond exactly to those in the complex symbol.

## 1.2. Status of adverbials in *Aspects of the theory of syntax*

It is towards the conclusion of Chomsky's discussion of strict subcategorization (1965:101 ff.) that he makes clear his position on the status of adverbials.

### 1.2.1. V-Comps and VP-Comps

He observes that a distinction must be drawn between 'Verbal Complements' and 'Verb Phrase Complements', since verbs manifest a high degree of 'cohesion' with the former and must be subcategorized accordingly, whereas the latter have 'no particular connection with the verb' and thus do not entail any verb-subcategorization (Chomsky, 1965:101). This distinction is of fundamental importance to the understanding of the function of the adverbial in the sentence and recurs

throughout the relevant literature.<sup>1</sup>

It is not always immediately obvious whether an adverbial is to be classified as a Verbal Complement (henceforth V-Comp) or as a Verb Phrase Complement (VP-Comp); indeed, as Chomsky himself indicates, both may display the same surface form, as in (13):

(13) He decided on the boat.

(13) is an ambiguous sentence, meaning either that the referent of *he* made up his mind about something unspecified while on the boat or that, after some deliberation, he resolved at an unspecified location on some course of action with respect to the boat (i.e. to buy it, use it as a means of transport, or whatever). An analogous German example is (14):

(14) Er fragte nach mir.

which may be glossed either as 'He inquired about me (my state of health)' or as 'He asked after I did', according as *nach mir* functions as a V-Comp or a VP-Comp.

1. There is an especially thorough discussion of the equivalent distinction in German in Steinitz (1969), who systematically discriminates between Adv, an obligatory co-constituent of the verb determining its subcategorization, and Advb, an optional complement. These two types of adverbial correspond exactly to Chomsky's 'Verbal Complement' and 'Verb Phrase Complement' respectively.

#### 1.2.1.1. Preposability criterion

In order to pinpoint the ambiguity of such sentences as (13) in more precise terms than the somewhat hazy notion of cohesion,<sup>1</sup> Chomsky advances the claim that only VP-Comps may be optionally moved to the front of the sentence ('preposed'). This assertion requires qualification, however, in the light of such perfectly acceptable sentences as (15) and (16) below, in which *into the room* and *for three hours* have been preposed as a result of Y-movement (cf. Postal, 1971:142 ff.), a re-ordering transformation permitted in most dialects of English:<sup>2</sup>

(15) Into the room they dashed.

(16) For three hours it lasted.

Chomsky specifically states, however, that *dash ... into the room* and *last ... for three hours* are V + V-Comp constructions. The suggested preposability criterion would predict that Y-movement is inapplicable to the prepositional phrases in (15) and (16); since this is not so,

1. Cf. Carvell and Svartvik (1969:12), who note that the distinction between the VP-Comp and V-Comp is 'often based on the feeling that in the first ... the verb and the preposition form a close unit, in the second ... they do not. However, although it is indispensable to the analyst, such linguistic feel should not be made the only basis for ordering the material'.

2. Carvell and Svartvik (1969:46) point out in this connection that 'emphatic front position is almost always possible with emphatic intonation and stress'.

the criterion cannot be regarded as adequate for distinguishing between the two complement-types. Even if Chomsky's criterion were granted limited validity for English (e.g. for non-contrastive sentences), it would be of no avail for identifying complement-types in German, where much greater freedom of transposing sentence-elements is permitted than in English. Compare the following, translationally equivalent sentences:

(17) ?With the gift he was pleased.

(18) Über das Geschenk hat er sich gefreut.

Chomsky's criterion can predict the dubious acceptability of (17), but cannot be adapted to account for the V-Comp status (to be established in 1.2.1.6 below) of *über das Geschenk* in (18).

#### 1.2.1.2. Pseudopassivization criterion

In the course of his discussion of passives, Chomsky (1965:105) points to a further alleged difference between the two types of adverbial: he asserts that, in English, VP-Comps, in contradistinction to V-Comps, are not subject to the Pseudopassivization transformation,<sup>1</sup> i.e. the governed NP in a PP introduced as a VP-Comp cannot be transformed into the subject of a semantically equivalent passive sentence. He quotes the example *Unspecified-Subject is working at the office*, to which there is no parallel passive construction <sup>+</sup>*The office is being worked at*, while there is no objection possible to *The job is*

1. This transformation has no equivalent in German syntax.

*being worked at quite seriously*, which is derived from an underlying phrase-marker containing *at the job* as a V-Comp. This is undoubtedly correct, but the argument affords no criterion for telling the two kinds of complement apart, since many V-Comps cannot be passivized and are therefore, in this respect, indistinguishable from VP-Comps. This can be exemplified by attempting to passivize some of Chomsky's own examples of V-Comp constructions:

- (19a) Someone dashed into the room.
- (19b) <sup>+</sup>The room was dashed into.
- (20a) Something lasted for three hours.
- (20b) <sup>+</sup>Three hours were lasted for.
- (21a) Someone remained in England.
- (21b) <sup>+</sup>England was remained in.

#### 1.2.1.3. Subcategorization criterion

Chomsky's claim that V-Comps, but not VP-Comps, induce verb-subcategorization affords a potential criterion for distinguishing between the two complement-types. However, it turns out that this claim is too strong and therefore could not be used as the basis for a test. Consider the following observations:

A. Sentences predicating non-contingent ('essential') states of animate subjects cannot co-occur with VP-Comps. Cf. (22) to (24):

- (22a) Franz weiss alles.
- (22b) Frank knows everything.

- (23a) <sup>+</sup>Franz weiss alles vor dem Haus.  
(23b) <sup>+</sup>Frank knows everything outside the house.  
(24a) <sup>+</sup>Franz weiss alles um Mittag.  
(24b) <sup>+</sup>Frank knows everything at midday.

B. The choice of Time VP-Comp is determined by the inherent aspectual properties (the 'Aktionsart') of the verb: a punctual time-adverbial cannot co-occur with a non-punctual verb and *vice versa*. Cf. (25) to (28):

- (25a) Den ganzen Abend lang ist er auf demselben Thema  
herumgeritten.  
(25b) He harped on the same topic throughout the entire evening.  
(26a) <sup>+</sup>Um Mittag ist er auf demselben Thema herumgeritten.  
(26b) <sup>+</sup>He harped on the same topic at midday.  
(27a) Um Mittag ist der Zug angekommen.  
(27b) The train arrived at midday.  
(28a) <sup>+</sup>Den ganzen Abend lang ist der Zug angekommen.  
(28b) <sup>+</sup>The train arrived throughout the entire evening.

For the Standard Theory to capture these restrictions, it would be necessary to subcategorize the verb with respect to VP-Comps. This, however, would destroy Chomsky's claim that only V-Comps affect the subcategorization of the verb.

#### 1.2.1.4 Omissibility test

Other grammarians than Chomsky have addressed themselves to the distinction between VP-Comps and V-Comps. One test that is potentially

applicable to both English and German is the 'Weglassprobe' or 'omissibility test'.<sup>1</sup> To take an example from German, in such a sentence as (29), *vor Jahren* would be termed a VP-Comp on the grounds that it could readily be omitted without rendering the sentence ungrammatical:

(29) Vor Jahren wohnte ich in Berlin.

*In Berlin*, on the other hand, would be interpreted as a V-Comp because of its very inomissibility under the same circumstances. This test is a cornerstone of both major approaches to structural grammar currently in favour in Germany, 'Operationale Satzgliedanalyse', espoused by Glinz and his followers in the Federal Republic,<sup>2</sup> and 'Valenzgrammatik' ('valency grammar'), inspired by the work of Tesnière (1959) and studied in both the Federal Republic and the German Democratic Republic.<sup>3</sup>

The omissibility test cannot however be regarded as a valid discovery procedure. Consider (30) to (33):

1. Fillmore (1968:26, fn. 34) uses the parallel notion of 'optionality' to distinguish between 'weakly restricting L' and 'highly restricting L', equivalent to locative VP-Comp and locative V-Comp respectively.

2. Cf. especially Glinz (1952, 1957, 1970, 1971), Boettcher (1972), and Brinker (1972).

3. Cf. especially Heringer (1970), Helbig and Schenkel (1973), Helbig (1971), and Engelen (1975).

- (30) Er bettelte um Almosen.
- (31) Er bettelte um Nahrung.
- (32) Er bettelte um acht Uhr morgens.
- (33) Er bettelte.

(30), (31), and (32) may each be given the surface-structure analysis *Er bettelte* + [*um* + NP<sub>pp</sub>]. The PP may be freely omitted from all three sentences, resulting in each case in (33). It is therefore tempting to attribute the same status to all three PPs and to analyse them as VP-Comps on the grounds of their omissibility. This would militate, however, against native speakers' intuitions that there is close cohesion between *bettelte* and the PPs in (30) and (31), but not in (32). There are several syntactic phenomena which reflect these intuitions:

- A. Both (30) and (31) could occur as a natural response to *Worum bettelte der Arme?*, where the PP in either case is elicited by *worum*; in contrast, the PP *um acht Uhr morgens* may not be elicited by *worum*, but only by *wann* or *zu welcher Stunde*.
- B. The PPs in (30) and (31) may both be proadverbialized as *darum*, whereas the PP in (32) has only *dann* as a proform.
- C. (30) and (31) may be roughly paraphrased as (34) and (35) respectively, whereas (36) is nonsense:

- (34) Er versuchte sich Almosen zu erbetteln.
- (35) Er versuchte sich Nahrung zu erbetteln.
- (36) <sup>+</sup>Er versuchte sich acht Uhr morgens zu erbetteln.

If the close cohesion between *bettelte* and the PPs in (30) and (31)



is taken as an indication that these PPs are V-Comps and that *um acht Uhr morgens*, lacking such cohesion, is a VP-Comp -- that these analyses are indeed correct will be established in 1.2.1.6 below -- the omissibility test is shown to make false predictions about (30) and (31), and must therefore be rejected as a discovery procedure.

#### 1.2.1.5. *Do so* test

It is possible to discriminate between V-Comps and VP-Comps in a large class of English sentences by means of the '*do so* test' proposed by Lakoff and Ross (1966). They maintain -- the claim is repeated in Ross (1972a) -- that the construction *do so* in such a sentence as (37) is introduced by a replacement transformation operating upon a verb phrase, i.e. that *do so* is a 'pro-VP':

- (37) Harpo smoked stogies and Chico did so too. (Ross 1972a)

The *do so* test serves to delimit the VP in any non-copulative sentence  $S_1$ ; this is achieved by conjoining  $S_2$  and *X do so too* to  $S_1$ , where  $X$  is referentially non-identical to the subject of  $S_1$ . All elements occurring in  $S_2$  other than *do so* are defined as being outside the VP of  $S_2$ ; the corresponding elements in  $S_1$  are then also taken to be outside the VP of that sentence. Thus it may be concluded from (38) that *play the violin* constitutes the VP in the sentence *Menuhin can play the violin* and that the auxiliary *can* is outside the VP:

- (38) Menuhin can play the violin and Stern can do so too.

It follows that only VP-Comps may be expected to appear in the surface structure of  $S_2$ , since the V-Comp, as a constituent of VP, is one of

the elements replaced in surface structure by *do so*. This is borne out by the fact that, although (13) is ambiguous, there is no ambiguity in (39):

(13) He decided on the boat.

(39) He decided on the boat and she did so on the boat too.

In (39), *on the boat* can be analysed only as a VP-Comp because it has not been subsumed by the pro-VP *do so*. Lakoff and Ross' test also correctly predicts the ungrammaticality of (40), in which the V-Comp *into the room* (cf. (15) above) has not been incorporated into *do so*:

(40) <sup>+</sup>He dashed into the room and she did so into the room too.

What partially vitiates the *do so* test is that it cannot capture the fact that, in such sentences as (41), *did so* is interpretable as a proform for *decided on the boat* in both readings of (13) discussed in 1.2.1 above, i.e. it can function in (41) either as a pro-VP or as a pro-Pred-P:

(41) He decided on the boat and she did so too.

Indeed there are cases where *do so* may function only as a pro-Pred-P, as in (42), which, according to all my informants, indicates that Bill's brainwave also came to him when he was on the boat:

(42) Larry had a brainwave on the boat and Bill did so too.

In other words, it is possible for *do so* to replace not only VP but also VP + VP-Comp. The *do so* test cannot therefore be regarded as a wholly satisfactory means of distinguishing between the two types of

adverbial complement.

Esau (1973b:66) attempts to discriminate between German adverbial complement-types using *dasselbe tun* as an equivalent to *do so*; the resultant sentences are however so unusual that it is difficult to assess their grammaticality. In any case, the *dasselbe tun* test suffers from the same weakness as the *do so* test, taking either VP or Pred-P as its domain, and, like its English equivalent, does not apply to sentences containing a copulative element (*sein*, *werden*, *sich befinden*, ... ).

#### 1.2.1.6. Unmarked negation test

In 1.2.1.1 to 1.2.1.5, five procedures for distinguishing between VP-Comps and V-Comps have been considered and each shown to be dissatisfactory in some respect. I wish to consider a new procedure, to be called the 'unmarked negation test', and to propose that it constitutes a more reliable means of distinguishing between the two adverbial complement-types. Having been unable to find any exceptions to the test, I believe it to be empirically adequate; it permits, moreover, an explication of the intuitively sensed notion of 'cohesion'.

The test is a refinement of the 'Negationsprobe' proposed by Engel (1970:377-378). Using the sentences (43) to (48) as examples:

- (43) Ich habe ihn in Kairo getroffen.
- (44) Ich habe ihn nicht in Kairo getroffen.
- (45) Ich habe ihn in Kairo nicht getroffen.

- (46) Er ist in Kairo aufgewachsen.  
(47) Er ist nicht in Kairo aufgewachsen.  
(48) <sup>+</sup>Er ist in Kairo nicht aufgewachsen. (Engel's starring)

he asserts that some adverbials (e.g. *in Kairo* in (43) to (45)) may be either preceded or followed by the negation-particle *nicht*, but that others, such as *in Kairo* in (46) to (48), may only occur after the negation-particle, unless 'contrastive stress' is present, in which case (48) is acceptable. The former he terms 'freie Adverbialia' (free adverbials) and the latter 'konstitutive Adverbialia' (constitutive adverbials); these terms are intended as equivalent to VP-Comp and V-Comp respectively. While Engel's distributional observations appear to be sound, his assignment of contrastiveness to (48) alone is, as we shall see, unjustified and obscures the actual situation.

Let us consider the general rules for the placement of the negation-particle *nicht* in German:

Rule 1. Under unmarked ('sentence') negation, where the whole clause is within the scope of the negation, *nicht* appears at the end of the clause, unless there are any verbal elements, including 'separable prefixes', occurring clause-finally, in which case *nicht* immediately precedes these elements.

Rule 2. In the case of contrastive ('constituent') negation, where only certain sentence-elements are negated and the others asserted, *nicht* immediately precedes the first of the sentence-elements to be negated. All such elements are characterized by 'contrastive stress'.

The position of *nicht* in (44) is explained by Rule 2: the PP *in Kairo* is contrastively negated, as is shown by the paraphrase *In Kairo war es doch nicht, dass ich ihn getroffen habe*, where the contrasted information is given prominence by the cleft-construction,<sup>1</sup> and also by the naturalness with which some such 'Korrektursatz' (Stickel, 1970:154) as *sondern in Alexandrien* may be added to (44). Note further that (44) entails, but is not equivalent to (49) below, in which the entire propositional content of (43) is commanded by a lexicalization of the negative operator: (44) therefore cannot take an unmarked negation reading:

(49) Es trifft nicht zu, dass ich ihn in Kairo getroffen habe.

(45), on the other hand, can be interpreted either as a case of contrastive negation, witness the possibility of adding *sondern bloss gesehen*, or as unmarked negation, in that it can take (49) as a paraphrase. In the first case, *nicht* appears before the sentence-element which it contrastively negates; in the second, *nicht* is constrained by Rule 1 to occur directly before the clause-final verbal element *getroffen*. (47), although superficially parallel to (44), differs in taking, like (45), not only a contrastive reading ( ... , *sondern in Alexandrien*) but also an unmarked reading (*Es trifft nicht zu, dass er in Kairo aufgewachsen ist*). (48), as Engel points out, is interpretable only as an example of contrastive negation ( ... , *sondern dort nur Soldat gewesen*). The preceding observations

1. On cleft-constructions in German, see 2.2.2 below.

may be summarized as follows:

(44) & (48): Contrastive negation, but no unmarked negation

(45) & (47): Both contrastive and unmarked negation

Engel's analysis is insufficient on two counts: firstly, he fails to distinguish between the two types of negation; secondly, he wrongly implies that only (48) may be assigned contrastive stress. It emerges from the above discussion that contrastive negation cannot be used as a criterion for distinguishing between the two complement-types, since it can occur in both types of sentence. There is, however, an interesting correlation between (45) and (47) as the only two sentences characterized by an unmarked reading. (43), when undergoing unmarked negation, requires the order Adv - *nicht* - V; (46), on the other hand, requires *nicht* - Adv - V under the same circumstances. The fact that the sequence Adv - V may not be interrupted by *nicht* in such sentences as (47) and (48) may be seen as a syntactic reflex of the intuitively sensed 'cohesion' between verb and adverbial. Thus, a relationship of cohesion will be said to exist between a verb and an adverbial if *nicht*, as a carrier of unmarked negation, may not occur after that adverbial. Where there is cohesion between a verb and an adverbial complement, the latter will be termed a V-Comp; otherwise, it will be a VP-Comp. Application of this criterion establishes that the adverbials in *sich über ein Geschenk freuen* (cf. (18) above) and *um Almosen betteln* (cf. (30) above) are indeed V-Comps.

### 1.2.2. Two types of VP-Comp

Now that the distinction between V-Comps and VP-Comps has been clarified, let us now consider how the various adverbials are introduced by Chomsky's phrase structure rules. He proposes (1965:106) the following rules as the first two of the 'illustrative fragment of the base component':

$$(50) \quad S \rightarrow NP \frown \text{Predicate-Phrase}$$

$$(51) \quad \text{Predicate-Phrase} \rightarrow \text{Aux} \frown \text{VP} \frown (\text{Place}) \frown (\text{Time})$$

Rule (51) is designed to capture the generalization that, in unmarked cases, place-adverbials precede time-adverbials in English sentences. Another motivation for introducing the nodes Place and Time in (51) lies in an attempt to account, in the categorial component, for the ungrammaticality of sentences containing two (or more) independent place adverbials or two (or more) independent time adverbials, as is shown by (52) and (53):

(52) <sup>+</sup>Der Zug kam um Mittag um zwei Uhr an.

<sup>+</sup>The train arrived at midday at two o'clock.

(53) <sup>+</sup>Die Kundgebung fand in London in Berlin statt.

<sup>+</sup>The demonstration took place in London in Berlin.

However, in seeking to formalize observations which involve semantic notions ('place' and 'time') in the syntactic component of the grammar, Chomsky runs into considerable difficulties. This will be shown in 1.2.2.2 and 1.2.2.3 after discussion, in 1.2.2.1, of an ill-founded proposal to conflate the two categories Place and Time.

1.2.2.1. Conflation of Place and Time

Chomsky distinguishes two types of VP-Comp, Place Adverbials and Time Adverbials. As an example of the former, he gives (1965:101) the second PP in (54):

(54) He decided on the boat on the train.

Elsewhere (1965:191), however, he paraphrases *decide on the boat* (where, as is clear from the context, *on the boat* is to be interpreted as a VP-Comp) as *decide (while) on the boat*. Chomsky thus appears to be on the brink of making the very plausible suggestion that a sentence such as (55) -- to take an analogous, but unambiguous example -- should be analysed as synonymous with (56) and that both (55) and (56) should be derived from a common source more akin to (56):

(55) He had a brainwave on the boat.

(56) He had a brainwave while (he was) on the boat.

This would be equivalent to proposing that all VP-Comps of Place are embedded within (clausal) VP-Comps of Time in deep structure. Further evidence for this proposal may be seen in the fact that (55) can occur as a natural answer to (57):

(57) When did he have his brainwave?

and that *on the boat* in (56) may be 'proadverbialized' as *then*:

(58) A: He had his brainwave on the boat.

B: Oh, I didn't realize it was then that he had his  
brainwave.



There are, however, two major reasons why the distinction between VP-Comps of Place and Time must be maintained. Firstly, (56) represents only one of two subtly differentiated interpretations that may be given to (55). (55) may occur as a natural response not only to (57), but also to (59), which elicits purely locational information; in this sense, *on the boat* may be proadverbialized only as *there*:

(59) Where did he have his brainwave?

(60) I didn't realize it was there that he had his brainwave.

Secondly, there are some VP-Comps of Place whose syntactic properties are otherwise identical to those of *on the boat* in (55) as regards omissibility, cleftability, preposability, etc., but which cannot be interpreted as time-adverbials. Consider (61) and (62), which, under normal interpretation, cannot be derived from the same sources as (63) and (64); (65) and (66) do not provide very satisfactory alternatives either:

(61) I discovered a mouse in the mousetrap.

(62) He looked for his cuff-links in the drawer.

(63) ?I discovered a mouse while I was in the mousetrap.

(64) ?He looked for his cuff-links while he was in the drawer.

(65) ?I discovered a mouse while it was in the mousetrap.

(66) ?He looked for his cuff-links while they were in the  
drawer.

Thus it is necessary to uphold the distinction between Place and Time Adverbials in order to differentiate the purely locative interpretation of such PPs as *on the boat* in (55) from their temporal interpretation.

# 1.2.2.2. 'Fleshing out' Chomsky's rules

The difficulties inherent in Chomsky's rules are obscured by the fact that he does not make explicit how the categories Place and Time are to be expanded by further phrase structure rules. It can be assumed, however, that both may be rewritten as prepositional phrases (*inter alia*): Chomsky states, for example, that 'the second Prepositional-Phrase in (51) [my (54), JLM] is ... a<sup>1</sup> Place Adverbial' (1965:101). It will therefore be necessary to add rules (67) and (68) to the 'illustrative fragment':

(67) Place → Prep-Phrase

(68) Time → Prep-Phrase

Note that these rules cannot operate before Chomsky's fifth rule, (69); otherwise the base would generate such unacceptable structures as (70) and (71).

(69) Prep-Phrase → {  
Direction  
Duration  
Place  
Frequency  
etc. }

(70) 
$$\begin{array}{c} \text{Place} \\ | \\ \text{Prep-Phrase} \\ | \\ \text{Place} \\ / \quad \backslash \\ \text{P} \quad \text{NP} \end{array}$$

(71) 
$$\begin{array}{c} \text{Time} \\ | \\ \text{Prep-Phrase} \\ | \\ \text{Place} \\ / \quad \backslash \\ \text{P} \quad \text{NP} \end{array}$$

1. My emphasis. In Chomsky (1957:30-31), the 'is a' relation is defined as the converse of the rewrite relation, i.e. 'ab is a Z' is equivalent to 'Z → ab'.

If (67) and (68) occur in the sequence of rules after (69) and the category Prep-Phrase to the right of the arrow in each of the rules is expanded by (72) as  $P \widehat{\text{NP}}$ :

$$(72) \quad \text{Prep-Phrase} \rightarrow P \widehat{\text{NP}}$$

then the resultant base component will contain two alternative expansions of Prep-Phrase, namely those in (69) and (72). Note, too, that one must assume that the categories introduced by (69), being dominated by Prep-Phrase, are to be expanded directly as  $P \widehat{\text{NP}}$  without any intervening Prep-Phrase node.

This 'fleshed out' version of Chomsky's 'illustrative fragment' suffers from two important drawbacks: (a) the inelegance of two distinct expansions of Prep-Phrase, (69) and (72), which may not be juxtaposed in the sequence and therefore cannot be conflated by means of the 'curly brackets notation'; (b) more crucially, the lack of motivation for the different domination relations holding for  $P \widehat{\text{NP}}$  syntagms -- for VP-Comps of Place, the structure will be as follows:

$$\boxed{\boxed{P \quad \text{NP}_{\text{Prep-Phrase}}} \text{Place}} \boxed{\quad}$$

while for V-Comps of Place, the structure will be:

$$\boxed{\boxed{P \quad \text{NP}_{\text{Place}}} \text{Prep-Phrase}} \boxed{\quad}$$

Since the two types of adverbial are adequately distinguished by virtue of their different mother-nodes in the tree, there is no reason why VP-Comps and V-Comps should not have the same internal structure. Thus it

must be concluded that Chomsky's rules for adverbials, when further expanded to accommodate prepositional phrases, do not yield satisfactory results. It will be necessary to find a better approach which preserves the distinction between Place and Time Adverbials, but which lacks the disadvantages of Chomsky's proposals.

#### 1.2.2.3. Dispensing with the categories Time and Place

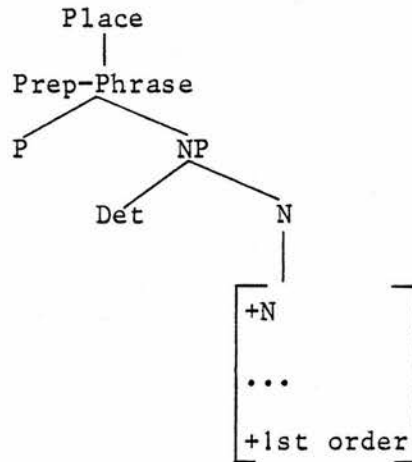
To this end, it will be interesting to consider how those place and time adverbials that are realized as PPs are distinguished in deep structure. In German, there are thirteen prepositions which may occur in place adverbials, but not in time adverbials: *abseits*, *ausser*, *diesseits*, *entlang*, *gegenüber*, *inmitten*, *jenseits*, *längs*, *nächst*, *neben*, *oberhalb*, *unterhalb*, *unweit*; and there are four which may occur in time adverbials, but not in place adverbials: *binnen*, *seit*, *während*, *zeit*. All other prepositions occurring in one of the two adverbial-types may also occur in the other: these are twenty-one in number, and, all being characterized by a relatively high frequency of occurrence, may be looked upon as constituting the core of the German prepositional system: *ab*, *an*, *auf*, *aus*, *ausserhalb*, *bei*, *bis*, *durch*, *gegen*, *hinter*, *in*, *innerhalb*, *mit*, *nach*, *über*, *um*, *unter*, *von*, *vor*, *zu*, *zwischen*. This large degree of overlap in distribution among the core prepositions of German leads one to hypothesize that the distinction between place and time adverbials realized as PPs tends not to be reflected in the choice of preposition.

It would appear, however, that the distinction is linked to the type of nominal that occurs in deep structure as the head of the

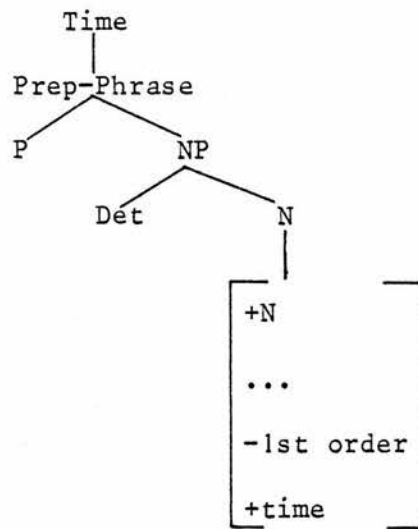
'governed noun phrase' (i.e. the NP introduced by rule (72) in 1.2.2.2 above). In the case of the place adverbials, the nominal denotes one or more 'material objects', a term which I take to include persons, animals and 'things' generally, with respect to which an entity or set of entities denoted by an expression outside the PP is located. Following Lyons (1968:347, 1977:446), I shall refer to such nominals as 'first-order nominals'. With time adverbials, on the other hand, the nominal that is head of the governed NP denotes either a point or period of time, or alternatively an event which marks off a stretch of time (as in *nach dem Krieg, vor Tagesanbruch, ...*).<sup>1</sup> These I shall term 'time nominals'. In order to ensure that suitable morphemes are selected from the lexicon for insertion under each node, in other words that in adverbials, first-order nominals are attached only to nominal complex symbols dominated by Place and time nominals only to complex symbols dominated by Time, it will be necessary to include appropriate features both in the complex symbols and in the lexicon. This will result in such sub-trees as (73) and (74):

1. I am assuming that apparent exceptions to this generalization, such as *vor Johann* in *Ich kam vor Johann an* are derived from clausal time adverbials (cf. *Ich kam an, bevor Johann ankam*).

(73)



(74)



Since the occurrence of the features  $[+ \text{ 1st order}]$  and  $[+ \text{ time}]$  is totally predictable from the labelling of the highest node in the subtree, either the feature or the specification of the node must be redundant. It has already been shown that the feature is essential for correct lexical insertion. There is also independent syntactic motivation for such a feature as  $[+ \text{ 1st order}]$  in the impossibility, pointed out by Lyons (1968:347), of predicating a time of a first-order nominal; cf. (75) to (77):

- (75) <sup>+</sup>Johann war gestern.  
 (76) <sup>+</sup>Der Hund geschah gestern.  
 (77) Die Kundgebung fand gestern statt.

Within the Standard Theory, these restrictions may be most readily captured with the aid of a feature  $[+ \text{1st order}]$ . Thus, given the necessity of retaining the features, the only way of avoiding the redundancy is to drop the labels Place and Time and to replace each with the same label, for which the most satisfactory characterization might be 'Adv(erbial)'. This would be equivalent to having, instead of the second rule of Chomsky's base component, i.e. (51) above, the following expansion of Predicate-Phrase:

$$(78) \quad \text{Predicate-Phrase} \rightarrow \text{Aux} \frown \text{VP} \frown (\text{Adv}) \frown (\text{Adv})$$

Such a rule<sup>1</sup> would indeed be more in keeping with the spirit of Chomsky (1965): the syntactic parallelism of place and time adverbials is explicitly captured in the categorial component, the function of which is 'to define the system of grammatical relations and to determine the ordering of elements in deep structure' (1965:123), whereas the semantic difference is expressed by means of lexical features, which are in fact intended to be 'purely semantic' (1965:88).

1. If it proves feasible to derive all adverbials from underlying PPs (cf. for example 1.3.1.1 for a proposal to derive one-word adverbs of location and direction from PPs), it will be possible, rather than replacing the labels Place and Time with Adv(erbial), to delete these nodes altogether, so that two optional PP-nodes are directly dominated by Predicate-Phrase, i.e.:

$$(i) \quad \text{Predicate-Phrase} \rightarrow \text{Aux} \frown \text{VP} \frown (\text{PP}) \frown (\text{PP})$$

The only foreseeable difficulty with the modified rule is that it can generate nonsensical sentences with two mutually exclusive adverbials of the same type, as in (52) and (53) above. It should be possible, however, to avoid the generation of such non-sentences by means of appropriate selectional features in the verbal complex symbol, or alternatively some type of pragmatic rule.

### 1.2.3. Two types of V-Comp

Let us now consider Chomsky's proposals for V-Comps. The third rule of his 'illustrative fragment' indicates that VP may be rewritten in various ways, including the following:

$$(79) \quad VP \rightarrow V \frown (NP) \frown (Prep-Phrase) \frown (Prep-Phrase) \frown (Manner)$$

This rule generates one obligatory constituent V, and three kinds of optional V-Comp, a noun-phrase, either one or two prepositional phrases, and a manner adverbial, each of which, if present, participates in verb-subcategorization. If Prep-Phrase is chosen, this rule will be involved in the generation of such constructions as *dash into the room*, *remain in England*, *speak about the new economic policy*, and, in an equivalent grammar of German, *ins Zimmer hineinstürzen*, *in England bleiben*, *über die neue Wirtschaftspolitik sprechen*, etc.

Chomsky fails, however, to make a systematic distinction between two important classes of adverbial V-Comp to be found in both English and German, which I intend to call 'prepositional complement' and 'prepositional object'. No formal differentiation is made, for



example, between the italicized phrases in (80) and (81):

- (80a) Die Alte setzte sich *ans Fenster*.
- (80b) Er hängt das Gemälde *an die Wand*.
- (80c) Soll ich mein Fahrrad *an die Mauer* lehnen?
- (80d) Jemand klopft *an die Tür*!
  
- (81a) Ich beteiligte mich gern *an diesem Ausflug*.
- (81b) Der Alte erkrankte *an Krebs*.
- (81c) Die Grossmutter dachte immer wieder *an die Jugendzeit*.
- (81d) Wegen dieser Affäre hat er viel *an Ansehen* verloren.

In (80), there are a large number of prepositions in paradigmatic relationship to *an* in each of the sentences. Consider for example (80a), where any of the prepositions *bei*, *gegenüber*, *hinter*, *jenseits*, *neben*, *vor*, ... , may be substituted for *an*, with appropriate inflexional modification of the following NP. The choice of prepositions is limited only by the constraints inherent in the situation being denoted; in other words, the relative unacceptability of *sich durch das Fenster setzen* arises from the unlikelihood that such a situation should ever be physically possible, not from any systematic exclusion of such constructions from the language. V-Comps characterized by such prepositions will be termed 'prepositional complements' (PCs). In (81), on the other hand, it is impossible to substitute any other preposition for *an*: its occurrence is fully determined by the co-presence of the verbs *sich beteiligen*, *erkranken*, *denken*, and *verlieren*. V-Comps introduced by prepositions of this type will be termed 'prepositional objects' (POs).

There is an important semantic difference between POs and PCs which correlates with these distributional observations and which should be reflected in deep structure. In PCs, the preposition always has an isolable semantic value, typically in the realm of spatial or temporal location: it must therefore figure in deep structure in order to be interpretable by the semantic component. In POs, however, the preposition is 'translative' in function (cf. 0.1.2 above) and, like inflexional suffixes on NP-constituents, carries no meaning. Again, like inflexional markings, the preposition in a PO (henceforth the translative preposition) can have a discriminating function (cf. Günther, 1975:79): just as the accusative vs. dative opposition allows a distinction between, for instance, *Sie öffneden ihn* ('They opened it' sc. *den Laden* etc.) and *Sie öffneden ihm* ('They opened the door (or whatever) for him'), so the presence vs. absence of *auf* distinguishes between *Sie achteten auf ihn* ('They paid attention to him') and *Sie achteten ihn* ('They respected him'). Note, however, that, whereas the choice of case-marking for the object of *öffnen* does not affect the meaning of the verb, but rather the interpretation of its object, the occurrence or non-occurrence of the translative preposition *auf* distinguishes between two interpretations of the verb *achten*; other verbs in this category are *hören* and *bestehen*:

(82a) Ich hörte die Musik.

'I heard the music'

(82b) Ich hörte auf die Musik.

'I listened to the music'



- (83a) Ich bestand die Prüfung.  
'I passed the test'
- (83b) Ich bestand auf meinem Recht.  
'I insisted on the rightness of my viewpoint'
- (83c) Wasser besteht aus Wasserstoff und Sauerstoff.  
'Water consists of hydrogen and oxygen'
- (83d) Das Leben besteht in Arbeit.  
'Life consists in work'

Thus, given that the occurrence of a translative preposition is fully determined by the co-presence of a verb requiring that preposition, that the preposition itself carries no meaning, and that with certain verbs it has the function of distinguishing two or more meanings of the verb, there is every reason to believe that translative prepositions do not figure as such in deep structure, but are derived transformationally, for example by expanding features on the main verb of the clause in which they occur as a prepositional constituent. The proposal is, therefore, that PCs are introduced in the base component as prepositional phrases, but POs as noun phrases. Detailed proposals and further justification for this derivation of POs will be found in 3.2.1 below.

#### 1.2.4. The expansion of Prep-Phrase

The fourth rule in Chomsky's proposed base component, (69), repeated here for convenience:

$$(69) \quad \text{Prep-Phrase} \rightarrow \left\{ \begin{array}{l} \text{Direction} \\ \text{Duration} \\ \text{Place} \\ \text{Frequency} \\ \text{etc.} \end{array} \right\}$$

introduces four types of V-Comp prepositional phrases; since the list is incomplete, Chomsky adds 'etc.'. Even granted that the labels 'Direction', 'Duration', etc. were chosen merely for mnemonic purposes, it is beyond dispute that Chomsky, with (69), is clandestinely introducing semantic notions into his supposedly autonomous syntax. His principal goal in distinguishing between the various constituents of Prep-Phrase is of course to permit verb-subcategorization. However, since he introduces a large, unspecified number of adverbial categories into his grammar, each of which is in one-to-one correspondence with a clearly definable semantic notion, it would appear unreasonable to regard them as syntactic categories in any meaningful sense of the term. Whereas such expressions as NP, VP, Adj, Aux, etc. manifestly belong to the terminology of syntax (traditional grammarians' attempts to attach notional definitions to them have been notoriously unsuccessful), Chomsky produces no evidence to show that the multifarity of adverbial categories hinted at by rule (69) is anything else than a bundle of semantic concepts whose presence in the syntactic component is necessitated only by the device of verb-subcategorization.

In introducing the categories that appear to the right of the arrow in (69), Chomsky is thus seeking to handle semantically conditioned co-occurrence restrictions with syntactic means. It remains to be considered, however, whether, if the categories introduced in (69) were abolished, the device of selectional restriction

rules, which 'subcategorize a lexical category in terms of syntactic features that appear in specified positions in the sentence' (Chomsky, 1965:113), could be utilized more appropriately than strict subcategorization rules. Selectional restriction rules are intended by Chomsky to handle co-occurrence phenomena which involve distinctions that are relevant for semantic interpretation and are one of the aspects of grammar which, in the words of Chomsky's paragraph heading, are on 'the boundaries of syntax and semantics' (1965:148). They might therefore seem to offer an attractive alternative to such a rule as (69).

Selectional restriction rules are sensitive only to features in complex symbols introduced under a lexical category. If it were possible, therefore, to discover a set of features that would unambiguously characterize the nominal elements of PPs of direction, duration, place, frequency, etc., selectional restriction rules could be used to distinguish different types of prepositional V-Comp. However, this cannot be done: the set of nominals that may appear in V-Comps of direction is essentially co-extensive with the set of nominals that may appear in V-Comps of place (i.e. 'first-order nominals' in the sense of 1.2.2.3 above); moreover, V-Comps of concession (introduced by *in spite of*, *notwithstanding*, *for all*, etc.) and V-Comps of reason (introduced by *because of*, *on account of*, etc.) both involve the same types of nominal (essentially all but time-nominals). There is, in other words, no way of identifying types of V-Comp from the type of nominal alone: the meaning of the preposition must also be taken into account. This cannot however be achieved by

selectional restriction rules, since prepositions are not treated as a lexical category by Chomsky (1965).

Not only are selectional restriction rules unsuitable for distinguishing between types of V-Comp, but their very status in the base component is questionable. McCawley (1968a) has shown that selectional restrictions are constraints, not on the combination of lexical items, but on what constitutes a 'possible message'. In other words, they are not located on the boundary between syntax and semantics, but are wholly semantic in nature. McCawley therefore concludes that:

... the matter of selectional restrictions should be totally separate from the base component and ... the base component thus be a device which generates a class of deep structures without regard to whether the items in them violate any selection restrictions (1968a:135).

I thus propose that rule (69) be discarded and the base component be left free to generate PPs as V-Comps which are then expanded as  $P \overline{NP}$  without any intervening node. As we shall see (1.3.1.2 below), this is also the policy of the 'Extended Standard Theory'.

### 1.3. The status of the PP in the Extended Standard Theory

Chomsky (1970) presents a series of arguments for treating such nominals as *criticism*, *refusal*, *eagerness*, *belief* not as the result of a nominalization transformation, as proposed by Lees (1960) and

Chomsky (1965:184-186), but as lexical items inserted as such into deep structure. This is the heart of what has come to be known as the 'lexicalist hypothesis'. The details of the arguments between 'lexicalists' and 'transformationalists' are not relevant here, but what is of immediate interest is the  $\bar{X}$ -convention associated with the lexicalist hypothesis. According to this convention, all rules of the base component are expressed in the form of a highly restricted number of general schemata which are designed to capture parallelisms between the syntactic behaviour of different constituents without radically reducing the number of categories recognized by the grammar. The result is a markedly simpler set of base rules than those given by Chomsky (1965:106-107). The  $\bar{X}$ -convention has been integrated into what has come to be known as the 'Extended Standard Theory' (initially proposed in Chomsky, 1971).

It is unfortunately unclear what the status of the prepositional phrase is in a base component set up in accordance with the  $\bar{X}$ -convention. It appears, however, that given the rule schemata proposed by Chomsky (1970):

$$(84) \quad \bar{\bar{X}} \longrightarrow \text{Spec } \bar{X} \quad - \quad \bar{X}$$

$$(85) \quad \bar{X} \longrightarrow X \quad - \quad \text{Comp } X$$

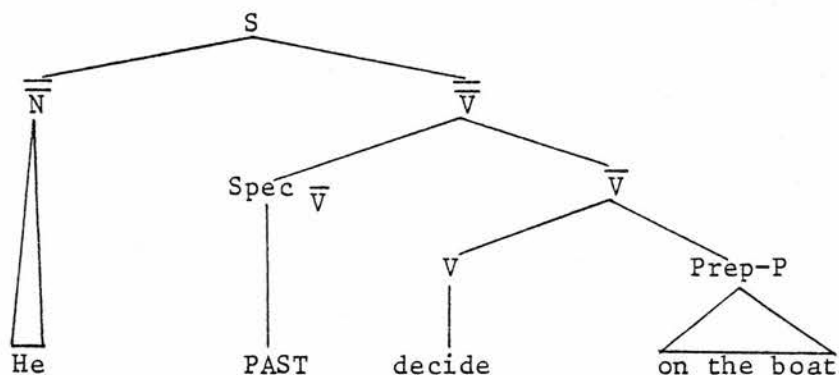
where  $X$  can be any one of the set  $\{N(\text{oun}), A(\text{djective}), V(\text{erb})\}$  and  $\text{Comp } X$  is a cover-term for the set  $\{NP, S, NP\ S, \text{Prep-P}, \text{Prep-P Prep-P}\}$

every prepositional phrase is a  $\text{Comp}_X$ . This analysis has the fundamental disadvantage of obscuring the fundamental difference between VP-Comps and V-Comps discussed above (1.2.1), since, where X is interpreted as V,  $\text{Comp}_V$  appears as a sister-constituent of V, but never of  $\bar{V}$  (= VP). In practical terms, Chomsky's formulation of the  $\bar{X}$ -convention can offer no natural explanation for the ambiguity, discussed in 1.2.1 above, of (13), repeated here for convenience:

(13) He decided on the boat.

Whereas Chomsky (1965) could account for the ambiguity by analysing *on the boat* as a sister-constituent of VP under one interpretation and a sister-constituent of V under the other, the  $\bar{X}$ -convention assigns only one underlying structure to the sentence, (86), and thus fails to capture its ambiguity:

(86)



Jackendoff (1973) proposes an alternative approach to the analysis of the prepositional phrase whereby the  $\bar{X}$ -convention applies to P(reposition) in just the way proposed by Chomsky for N, A and V.<sup>1</sup>

1. For an examination of some other consequences of this proposal, and some suggestions for an alternative approach, see Mackenzie (1975).



This proposal does not solve the difficulty that arises with the distinction between VP-Comps and V-Comps, since Jackendoff leaves Chomsky's rule schemata untouched. Thus PP is still introduced as a complement only. Indeed, Jackendoff explicitly proposes that *in a battered Ford* in (87):

(87) Otis T. Flywheel raced away in a battered Ford.

be analysed as a complement of V, dominated by VP (1973:349), although Chomsky (1965) would treat such a PP as a VP-Comp, an analysis which is borne out by the *do so* test:

(88) Otis T. Flywheel raced away in a battered Ford and Frodo Marx did so in a streamlined Cadillac.

Despite the fact that the important distinction between the two adverbial-types is not captured, Jackendoff makes several interesting points about the internal structure of prepositional phrases that deserve detailed discussion. In particular, he presents several arguments in support of the claim that  $\bar{X}$  permits a unitary account of prepositions and particles. These arguments will be examined in the ensuing paragraphs.

#### 1.3.1. Conflation of the categories 'particle' and 'preposition'

Jackendoff is concerned with the status of the items characterized by Fraser (1965) as 'particles', i.e. the non-verbal elements of such constructions as *run away*, *look down*, *call up*, etc. He offers six arguments originally presented by Emonds (1972) to show that particles are 'intransitive prepositions'. Briefly summarized, these

arguments are as follows:

- a) The morphological similarity of prepositions and particles can hardly be coincidental: *into* - *in*; *down* - *downstairs*; *after* - *afterwards*; *through* - *through*; *over* - *over*; etc.;
- b) Particles can be seen as related to prepositions in the same way as intransitive *eat*, *smoke*, and *drink* are related to their transitive equivalents;
- c) Such verbs as *put*, which require not only a direct object but also (i) a PP, (ii) a directional adverb (*there*, *outdoors*, ... ) or (iii) a particle in their complement will have simpler strict subcategorization features if all these complement-types are treated as PPs;
- d) The inversion of an intransitive verb and its subject, when no auxiliary is present, is occasioned by the preposing of (i) a PP, (ii) a directional or locational adverb, (iii) a particle, or (iv) a participle plus a directional or locational adverb. The movement rule in question will be less elaborate if the structural description (SD) makes reference simply to (Participle) PP;
- e) The first element of the syntagm Directional Phrase + *with* + Definite NP (e.g. *Into the dungeon with the traitors!*) may be realized as a PP, a particle or an adverb, and again the SD that makes reference to PP alone is simpler;
- f) The modifier *right* -- at least in the dialect described by Jackendoff and Emonds, if not in my own -- may occur only before (i) a PP, (ii) a directional or locational adverb, or (iii) a particle, and again the SD that refers to PP alone is simpler.

These arguments give support to two generalizations. The first,

that locational and directional adverbs are dominated by PP in deep structure, is not discussed by Jackendoff; the second, that the categories 'preposition' and 'particle' may be conflated into one 'hypercategory' is developed at length. The following sections will deal with each of these proposals in turn.

#### 1.3.1.1. Derivation of one-word adverbs from PPs

The proposal to have PP dominate adverbs of location and direction in underlying structure has been independently put forward in a discussion of German adverbials by Steinitz (1969), who analyses such 'reine Adverbien' as the result of a set of morphophonemic rules converting PPs with pronominal NPs into one-word adverbs. Thus she derives (1969:174) *oben* from OBERHALB + N<sub>[+Pro]</sub>. The ease with which all such adverbs, whether in English or German, may be paraphrased as PPs suggests that this analysis is essentially well-founded:

- (89)    *here*        : to/at this place  
         *hence*     : from this place  
         *thither*   : to that place  
         *home*      : at/to my/his/her (etc.) house
- (90)    *hier*        : an dieser Stelle  
         *hierher*   : von dieser Stelle  
         *dahin*     : an diese Stelle  
         *zuhaus*e    : in meinem/seinem/ihrer (etc.) Haus

Additional evidence for this analysis is offered by the following facts. Firstly, a large number of the adverbs in question may take (in English only) either a locative or an allative interpretation, i.e.

they may be synonymous with *at* NP<sub>i</sub> or *to* NP<sub>j</sub>, where  $i = j$ . Deriving these adverbs from the same sources as their PP-paraphrases affords a natural explanation for their ambiguity. Thus, when *there* is interpreted as a locative (= *dort*), I propose that it be derived from the PP *at that place*; under an allative interpretation (= *dorthin*), however, the source would be *to that place*. Secondly, the ambiguity of *home* in (91):

(91) After the dance, he brought the girl home.

where *home* may be paraphrased either as *to her home* or *to his home*, is explicated by an analysis which derives *home* from the same sources as the two paraphrases. Thirdly, the proposal to derive such adverbs from an underlying PP provides a natural explanation for the optional prepositions in such expressions as (*at*) *home*, (*from*) *hence*, *where* ... (*to*), etc., which may be seen as optionally retaining the hypothesized underlying preposition. There is thus considerable evidence for the derivation of such adverbs from underlying PPs.

#### 1.3.1.2. PPs: endocentric or exocentric?

The proposal which Jackendoff elaborates at greater length is that the categories 'preposition' and 'particle' should be conflated into one 'hypercategory', for which the term preposition should be retained. This proposal is expressed in the base rule (92):

(92) PP  $\rightarrow$  P - (NP)

In putting forward this rule, Jackendoff is implicitly making a claim about PPs which runs counter to well-established views on the nature of

such constructions.

Any construction which has the same distribution as one or more of its constituents is said to be 'endocentric'; any construction which is not endocentric is 'exocentric'. In terms of phrase-structure rules this dichotomy may be formulated as follows:

(i) When a constituent is rewritten as an obligatory constituent plus one or more optional constituents, the resultant construction is said to be endocentric:

$$A \longrightarrow B \frown C_i \frown C_{i+1} \frown C_{i+2} \frown \dots \frown C_n$$

where B = obligatory constituent

C = optional constituent

i may not be  $\emptyset$

(ii) When more than one obligatory constituent occurs to the right of the arrow, the construction is exocentric:

$$A \longrightarrow B_i \frown B_{i+1} \frown B_{i+2} \frown \dots \frown B_m \frown C_j \frown C_{j+1} \frown C_{j+2} \frown \dots \frown C_n$$

where i may not be  $\emptyset$

j may be  $\emptyset$

The obligatory constituent of an endocentric construction is the 'head' of that construction.<sup>1</sup> 'Head' is defined by Lyons (1968:233) as 'the constituent whose distribution is the same as that of the resultant

1. For obligatoriness as a criterion of 'headship', see Robinson (1970:272).

construction'. All other constituents of an endocentric construction are 'modifiers'.

Jackendoff's proposal is that PP should be rewritten as one obligatory and one optional constituent. Thus, the claim implicit in (92) is that PP is an endocentric construction, of which the preposition constitutes the head. This is however inconsistent with Bloomfield's (1935:194) classification of PP as exocentric:

The exocentric constructions in any language are few.  
In English we have ... *beside John, with me, in the home, by running away*; the constituents are a prepositional expression and an accusative expression, but the resultant phrase has a function different from either of these, appearing in entirely different syntactic positions.

Other grammarians classifying PPs as exocentric are Hockett (1958:191 ff.) and Lyons:

... *in Vancouver* is exocentric, since its distribution is different from either the preposition *in* or the noun *Vancouver*. (1968:232)

The correctness of Jackendoff's proposed rule and, hence, of the implicit claim that PPs are endocentric depends crucially on the validity of the second of the arguments summarized in 1.3.1 above. Jackendoff presents the argument in one sentence:

By treating particles as a type of preposition, we can claim that particles are related to the corresponding prepositions in much the same way that intransitive verbs such as *eat*, *drink* and *smoke* are related to their transitive counterparts. (1973:346)

I believe that this argument is invalid for the following reason. Jackendoff's statement implies that there are two lexemes *eat*, one of which is transitive, the other intransitive, and that the particle *inside* is related to the preposition *inside* in the same way as the two lexemes *eat* are related to each other. Now, although *eat* may occur without an object, in such sentences as (93) and (94):

(93) The children took hours over eating.

(94) To eat is to live.

an appropriate object may always be naturally reconstructed from the context (e.g. in (93) *their meal*, in (94) *good food*). This is not possible with such verbs as *evolve*, *emerge*, *arise*, *arrive*, which I shall call 'true intransitives'. This difference can be captured by analysing *eat*, *drink*, *drive*, etc. as 'pseudo-intransitives', by which I mean that they are characterized by an object in deep structure which is optionally deleted in the derivational process, whereas true intransitives have an object neither on the surface nor at any underlying level. The advantages of this approach are that (i) it is no longer necessary to posit a large number of homophonous and synonymous pairs of lexemes differentiated only by one subcategorization feature; (ii) a natural explanation is given for the ease with which an object

may be reconstructed for pseudo-intransitives; (iii) it sets up a framework within which the 'cline of deletability' may be described. By the cline of deletability I mean the following: the deletability of the object of a pseudo-intransitive verb is determined by a specific condition, namely the degree to which the entity denoted by the object is a natural participant in the state or activity denoted by the verb. In other words, it is progressively more acceptable to delete the object of *eat* in (95) than (96), and in (96) than (97):

- (95) When the visitors suddenly arrived at 7 p.m., we were  
busy eating our dinner.
- (96) When the visitors suddenly arrived at 7 p.m., we were  
busy eating our breakfast.
- (97) When the visitors suddenly arrived at 7 p.m., we were  
busy eating mud-pies and iron-filings.

Since the deletion rule is dependent on the probability of the collocation of verb and object, it is subject to 'pragmatic' rather than 'semantic' conditions. The fact that a pragmatically determined cline of deletability appears to exist suggests that *eat*, and indeed pseudo-intransitives in general, must be assumed to take an object in all deep-structure occurrences; otherwise, there would be no natural way of representing the cline.

Now, if pseudo-intransitives are all characterized by an object in deep structure, and all particles are syntactically parallel to pseudo-intransitives (cf. 1.3.1 above), the obvious conclusion is that particles must also be in construction with noun phrases in deep



structure. If a surface PP is to be generated, the NP is retained; if a particle is to be generated, the NP is deleted. This proposal involves reformulating Jackendoff's rule (92) as follows:

$$(98) \quad PP \longrightarrow P - NP$$

Note, however, that (98) defines an exocentric construction, since there is more than one obligatory constituent to the right of the arrow and neither of these can therefore have the same distribution as the entire construction. This rule is thus in keeping with the traditional classification of PPs as exocentric.

Jackendoff's rule (92) would however be confirmed if it could be shown that there is a class of intransitive, rather than pseudo-intransitive particles which are necessarily dominated by PP in deep structure. Fraser (1965) distinguishes three types of particle: 'literal', 'completive', and 'figurative'. Non-literal particles, i.e. either completive as in *stir up* (sc. *a liquid*), *finish up*, *fry up*, etc., or figurative as in *look up* (sc. *an entry in a work of reference*), *crop up*, *own up*, etc. are different from literal particles in having no isolable semantic content. Rather they combine with a form which may occur as a verb in its own right to create a syntagm which functions semantically as another verb of different meaning. Non-literal particles may therefore be seen as the intransitive counterpart of transitive prepositions, sharing the same criterial properties (cf. 1.2.3 above): (a) the occurrence of a non-literal particle is fully determined by the co-presence of a verb requiring that particle; (b) the particle has no independent semantic value; (c) it has the function of distinguishing two or more meanings of the verb-form to which it is

syntagmatically related. I would therefore suggest that a unitary analysis be given of both translative prepositions and non-literal particles, namely that both are introduced transformationally (see also 3.2.1 below). Non-literal particles thus provide no support for Jackendoff's rule (92).

It remains to be considered whether literal particles should be analysed as intransitive prepositions dominated by PP. Such forms as *away*, *off*, and *apart* in the following sentences may be regarded as examples of literal particles:

(99) I wish he would throw that dirty rag away.

(100) The youngsters ran off.

(101) It's difficult to keep them apart.

Literal particles do not differ in syntactic behaviour from pseudo-intransitive particles: in fact, their only distinguishing characteristic is that they cannot be paraphrased by PPs introduced by formally similar prepositions. This does not seem to be adequate justification for positing a class of particles (or intransitive prepositions) in deep structure, since all such particles can be paraphrased by PPs (although involving formally unrelated prepositions):

(102) away, off : to/in another place

(103) together : with each other, with one another

(104) apart, asunder : not with each other (not together)

If these PP-paraphrases are taken to be indicative of a plausible deep structure for literal particles, a simple and highly general account of particle-behaviour may be given, whereby literal particles are derived

from PPs and non-literal particles are introduced transformationally. Moreover, the fact that *ad hoc* morphological rules will be needed to convert the PPs underlying literal particles into one-word form should not be seen as a particular weakness of my proposal, since the morphological relationships between pseudo-intransitive particles and the prepositions in the PPs assumed to underlie them are also unsystematic and will need to be stated individually:

(105)	Preposition	Particle
	after	: $\left\{ \begin{array}{l} \text{after} \\ \text{afterward(s)} \\ + \text{afterhand} \end{array} \right\}$
	before	: $\left\{ \begin{array}{l} \text{before} \\ + \text{beforeward(s)} \\ \text{beforehand} \end{array} \right\}$
	inside	: $\left\{ \begin{array}{l} \text{inside} \\ + \text{insideward(s)} \\ + \text{insidehand} \end{array} \right\}$
	etc.	

It is thus now clear that literal particles are best analysed as the result of morphological processes reducing certain (transitive) PPs to one-word form (univerbation). If this proposal is implemented, there will be no PP-nodes dominating P alone, so that (98) will indicate the constituency of all deep-structure PPs. From this it follows that prepositional phrases are indeed all exocentric in underlying structure and not, as implied by Jackendoff's rule (92), endocentric. Moreover, if P cannot be identified as the head of an

endocentric construction, the supposed parallelisms between prepositional phrases and other phrases formalized by Jackendoff are also open to question.

#### 1.4. Summary

It remains to summarize the major initial proposals put forward in this chapter arising from the discussion of Chomsky (1965) and Jackendoff (1973). These proposals will be modified in subsequent chapters, but will be retained in principle.

Firstly, VP-Comps in the form of prepositional phrases and 'prepositional complements', i.e. V-Comps the prepositional element of which has an isolable semantic value, are both derived from underlying PP (cf. 1.2.2 and 1.2.3). Secondly, literal particles are also derived from underlying PPs: intransitive particles by a morphological process reducing full PPs to one-word form and pseudo-intransitives by the deletion of the major NP-constituent of the PP (cf. 1.3.1.2). Thirdly, 'prepositional objects', i.e. V-Comps involving a transitive preposition, and non-literal particles are the result of transformational insertion: if the verb with which these items co-occur is transitive, the outcome is a prepositional object; if it is intransitive, the outcome is a non-literal particle.

## CHAPTER II

### LAKOFF'S ANALYSIS OF THE PREPOSITIONAL PHRASE

#### 2.1. Derivation of prepositions from verbs

The first grammarian to have objected to Chomsky's (1965) treatment of the prepositional phrase as a deep-structure category is Lakoff (1965), who proposes an alternative analysis whereby certain types of preposition are transformationally derived from underlying verbal elements. The arguments he puts forward in support of his view presuppose acceptance of another set of arguments in the same dissertation, which are designed to establish 'the plausibility of the assertion that adjectives and verbs are members of a single lexical category' (1965: App. A, p.1). Lakoff shows that both word-classes behave very similarly under identical transformations (Adj-shift, Nominalization, 'Flip', Object Deletion, and Agent) and that they share a number of further syntactic properties (presence or absence of stativeness, the same range of complement-types, parallel selectional restrictions, and, what is especially relevant for his subsequent discussion of prepositional constructions, the necessity of being either transitive or intransitive).<sup>1</sup> By transitive adjectives Lakoff means those which are linked to a dependent NP either by means

1. Further arguments relating to adjectives and verbs as realizations of one underlying category are to be found in Lyons (1966). An extensive critique of Lakoff's proposals from the viewpoint of the  $\bar{X}$ -convention is to be found in Schachter (1973).

of a translative preposition (for German examples, cf. (106) to (108) below) or by inflexional morphology (cf. (109) to (111)):

- (106) Maria ist immer noch von ihren Eltern abhängig.
- (107) Johann ist arm an Freunden.
- (108) Das Kind ist begierig nach allem Neuen.
- (109) Der Taugenichts ist keinen roten Heller wert.
- (110) Du kannst meiner Treue gewiss sein.
- (111) Die Gattin soll dem Gatten treu sein.

Intransitive adjectives, on the other hand, may not take such a dependent NP (e.g. *blau*, *fleißig*, *körperlich*, ... ).

#### 2.1.1. *Near* as a transitive adjective

Considering the sentences (112) and (113), Lakoff observes that the preposition *near* in (112) can be nominalized by the suffixation of *-ness*, resulting, after genitivization of *the car* and the introduction of the translative preposition *to*, in (114):

- (112) The car is near the garage.
- (113) The car neared the garage.
- (114) The car's nearness to the garage.

The suffix *-ness* is otherwise used only for the nominalization of adjectives: Lakoff therefore concludes that *near* could advantageously be analysed as a transitive adjective. He also proposes that (113) be derived from a deep structure in which the underlying form of (112) is embedded by the 'inchoative transformation'. This is a 'minor rule',

i.e. one which applies 'only to exceptions and not to ordinary lexical items' (Lakoff 1965: IV-1).<sup>1</sup> It is designed to account for the relationship between such sentences as (115) and (116), or, equivalently in German, between (117) and (118):

- (115) The metal is hard.
- (116) The metal hardened.
- (117) Das Metall ist hart.
- (118) Das Metall verhärtete sich.

The structural description of the input to the inchoative transformation always contains a predicative adjective, which the rule turns into the verb of the output: Lakoff therefore concludes that if the inchoative transformation is generalized to include the relationship between (112) and (113), such a step would substantiate the case for treating *near* as a transitive adjective.

Lakoff's first argument, concerning nominalization with *-ness*, is a sound one. Indeed, there are several reasons for analysing *near* as an adjective. Firstly, it is the only preposition in English to accept comparison by the suffixation of *-er*:

- (119) I'm a lot better these days.
- (120) I'm a lot nearer my goal these days.
- (121) <sup>+</sup>I'm a lot inner London these days.

Secondly, it is the only preposition that allows intensification with

1. A more technical definition is to be found in Lakoff (1965:IV-20).

*very*:

- (122) I'm very happy now.
- (123) I'm very near my goal now.
- (124) <sup>+</sup>I'm very at the station now.

Thirdly, it is the only preposition which may be preceded by *how* as a WH-word of degree:

- (125) How content are we now?
- (126) How near the station are we now?
- (127) <sup>+</sup>How in the city are we now?
- (128) I didn't realize how content he was.
- (129) I didn't realize how near the station he was.
- (130) <sup>+</sup>I didn't realize how in the city he was.

Fourthly, although the possibility of inserting a translativ preposition (*to*) between *near* and its governed NP does not in itself mark *near* off from other prepositions, since *off*, *inside*, *alongside*, and *outside* may all occur with or without a following translativ *of*,<sup>1</sup> there is one respect in which *near* behaves more like an adjective than these prepositions. In such sentences as (125) to (130) above, the element modified by *how* appears to the immediate right of *how*. If *near to* is chosen rather than *near*, then *near* may appear alone to the immediate right of *how*, stranding *to* NP in its deep-structure position. This is also the case with transitive adjectives, but not with the four

1. The insertion of *of* is particularly prevalent in certain American dialects.



prepositions listed above that take optional translative *of*, even when modified by the standard *WH*-form for prepositions, *how far*:

(131) I wonder how attached he is to the house.

(132) I wonder how near he is to the house.

(133) <sup>+</sup>I wonder how far inside he is of the house.

Despite all these respects in which *near* resembles an adjective, it must be classified as a preposition in surface structure, because it may appear in exocentric construction with a NP as a VP-Comp, a position which is never occupied by an adjective, as in (134):<sup>1</sup>

(134) John shot Bill near the house.

Lakoff's second argument, according to which (112) and (113) are related in the same way as (115) and (116), cannot be accepted as it stands. His claim is that (113) and (116) are both derived by the same set of transformations, including the 'inchoative' transformation, from parallel deep structures in which the underlying forms of (112) and (115) respectively are embedded. Lakoff maintains (1965:IV-5 to 6) that (135) to (137) below are all derived from 'similar -- if not identical --

1. Ross (1972b) hypothesizes that syntactic categories do not constitute closed sets, but rather that items are to be classed according to their degree of 'nouniness', etc. He proposes, for example, that the categories 'adjective' and 'preposition' are not entirely distinct: he places *near* in the middle of a continuum or 'squish' leading from the most adjectival items on the left to the most prepositional on the right, as follows: *proud* - *opposite* - *near* - *like* - *in*.

deep structures' (1965:IV-6), each of which contains, as the underlying subject of the verb *come about*, *for the sky to be red*:

- (135) The sky reddened.
- (136) The sky became red.
- (137) The sky came to be red.

If the deep-structure VP *be red* is replaced by *be near the garage*, then, with an appropriate change of subject, the following sentences are created:

- (138) The car neared the garage.
- (139) <sup>+</sup>The car became near the garage.
- (140) The car came to be near the garage.

Note however that (139) is ill-formed and that (138) and (140) are not synonymous. Lakoff can deal with the ungrammaticality of (139) by means of a general rule blocking the occurrence of any copulative verb but *be* before a predicative prepositional phrase (see, for an informal statement of this rule, Quirk *et al.*, 1972:474); the non-equivalence of (138) and (140) is more problematic. The difficulty arises from the ambiguity of such forms as *red*, which can mean either 'come to be red' or 'come to be redder (sc. but not fully red)': these I shall refer to as the full and partial inchoative readings respectively. Among the forms quoted by Lakoff as inchoative verbs, *harden*, *cool*, *liquefy*, *loosen*, *solidify*, *thicken*, *sicken* and *blacken* may, like *red*, be interpreted as either full or partial inchoatives, whereas *freeze*, *break* and *open* may be understood only as full inchoatives. *Freeze*, for example, may be glossed 'come to be frozen', but not 'come

to be more frozen'. *Near*, however, differs from both types in having only a partial inchoative sense, in that it may be glossed 'come to be nearer' but not 'come to be near', as is immediately apparent from (138) and (140) above. As a result, the entailment (141):

$$(141) \quad X \quad V-en \quad \supset \quad X \quad be \quad Adj$$

$$\quad \quad \quad [+perfect] \quad \quad \quad [+present]$$

where V and Adj are morphologically related

does not hold for the verb *near* and the 'transitive adjective' *near*, as is shown by (142) and (143):

(142) The door has opened  $\supset$  The door is open.

(143) The car has neared the door  $\not\supset$  The car is near the door.

Note, however, that there is an entailment between the two sentences in (144):

(144) The car has neared the door  $\supset$  The car is nearer the door.

I would thus propose, in the light of (144), that the inchoative verb *near* be derived from a structure containing not the transitive adjective *near* but the comparative transitive adjective *nearer*.<sup>1</sup>

## 2.1.2. Lakoff's proposals for V-Comps and VP-Comps

Having established that there is a case for analysing *near* as a

1. I will not further examine the ultimate underlying structure of such comparative adjectives.

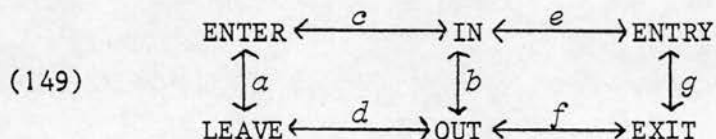
transitive adjective , Lakoff goes on to provide further arguments (1965:IX-15 ff.) designed to extend his analysis of *near* to other prepositions. With regard to the following sentences:

- (145) John is in the room.
- (146) John entered the room.
- (147) John is out of the room.
- (148) John left the room.

he firstly points out that *in* and *out* are felt to be opposites in the same way as *enter* and *leave*, secondly that *enter* is to *in* as *leave* is to *out*, and thirdly that (146) implies (145) and (148) implies (147). These relationships of semantic parallelism and implication may be satisfactorily accounted for, Lakoff maintains, only if *in* and *out* are analysed as transitive adjectives, i.e. as transitive verbals playing a role in deep structure very similar to that played by *enter* and *leave*. Lakoff further claims (1965:IX-15 to 16) that 'all other occurrences of locative *in* and *out* can be reduced to the above case in underlying analyses'. His contention is, thus, that the three pairs of lexical items *in* and *enter*, *out* and *leave*, and *near* (preposition) and *near* (verb) each have the same representation at the deepest level of analysis; the only differences are that the first of each pair has an additional feature [+ADJ] and that the second is subject to the inchoative transformation in the derivation of all sentences in which it occurs. In this way, three surface-structure (or 'secondary') categories with considerably divergent morphological characteristics and, in several respects, mutually exclusive syntactic distribution, namely verb, adjective and preposition, are traced back

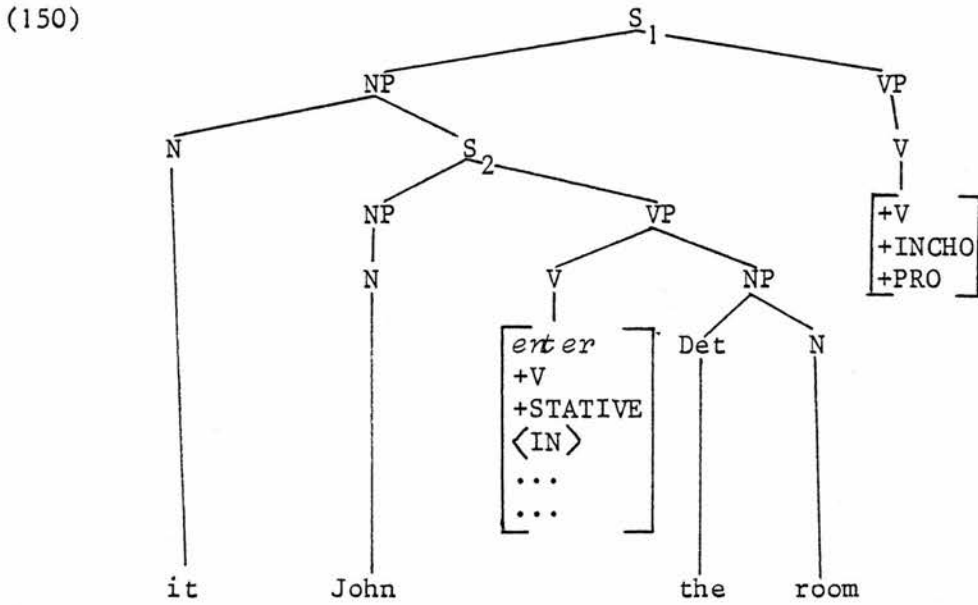
to one deep-structure (or 'primary') category 'verbal'.

Two of the arguments upon which Lakoff bases this claim are, it should be noticed, lacking in rigour. Consider the lexical field {ENTER, LEAVE, IN, OUT, ENTRY, EXIT} as displayed in (149):

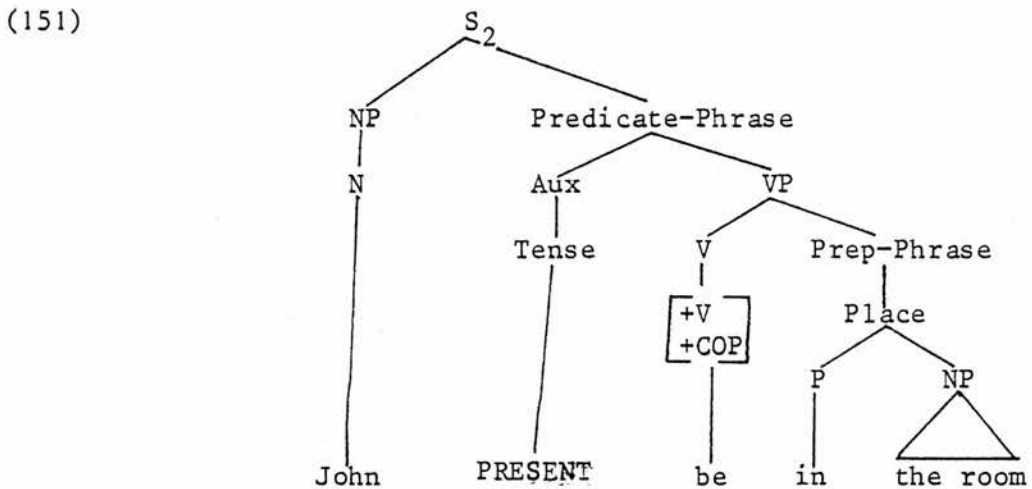


Lakoff's first and second arguments are that the parallelism between relations  $a$  and  $b$  and between relations  $c$  and  $d$  is evidence for categorial identity in deep structure. There are, however, similar parallelisms between  $b$  and  $g$ , and between  $e$  and  $f$ , where  $e$  and  $f$  are relations between prepositions and nominals and  $g$  is a relation between two nominals. Lakoff's line of argument forces the conclusion that the same two prepositions, *in* and *out*, are categorially identical to both verbals and nominals in underlying structure. This -- probably unforeseen -- consequence of Lakoff's argument suggests that semantic parallelism cannot by itself constitute evidence for the conflation of categories.

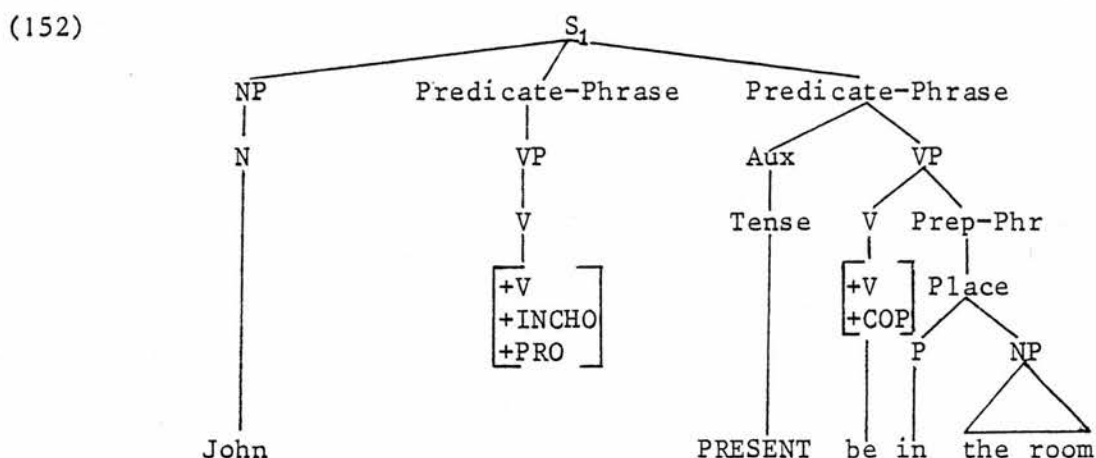
Lakoff's third argument, although ingeniously accounting for the entailment relation between (146) and (145), does not compel the reader to accept his analysis of the preposition *in* as a verb. The underlying structure of (146), according to Lakoff (1965:IX-17), is as follows:



If the representation of the embedded clause  $S_2$  in (150) is replaced with a structure more in line with the type of deep-structure analysis proposed by Chomsky (1965), as follows:



and the same transformations are applied to the entire tree of which (151) is a part as are required for the derivation of (146) from (150), namely *for*-Insertion, Extraposition, *it*-Substitution, Identical NP Substitution and *for*-Deletion (cf. Lakoff 1965:IV-9 to 11), the following structure emerges:



Now, if, following Gruber (1965), we allow 'polycategorical lexical attachment', which permits one lexical item to be attached to more than one terminal node, provided these nodes are linearly contiguous, it will be possible to attach the item *entered* to the four terminal elements

$$\begin{bmatrix} +V \\ +INCHO \\ +PRO \end{bmatrix} + \text{PRESENT} + \begin{bmatrix} +V \\ +COP \end{bmatrix} + \begin{bmatrix} +PREP \\ +IN \end{bmatrix}^1$$

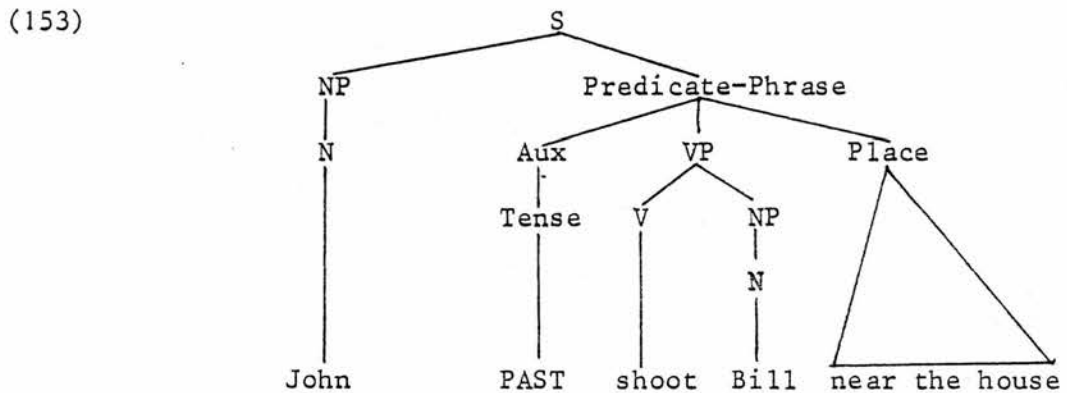
Thus, given Gruber's independently motivated extension of the *Aspects* proposals for lexical insertion, it is possible to account for the connection between *enter* and *in* transformationally without recourse to a re-analysis of *in* as a transitive adjective. My claim is not that Lakoff's proposal is untenable, but that his arguments are not compelling; indeed, his ideas will be integrated into Chapter IV below, by developing his remark, made in passing (1965:IX-15) that "'in" and "out" in (9-36) [my (145) to (148), JLM] have independent cognitive content and can be looked at semantically as two-place predicates

1. For a derivation of *John enters the house* according to Gruber's proposals, see de Rijk (1974:45-46). Neither Gruber nor de Rijk address the tense-problem:  $\begin{bmatrix} +INCHO \end{bmatrix} + \text{PRESENT}$  appears to give past or present perfect morphology.

relating "John" and "the room".

All the examples discussed hitherto in this section have had the surface-structure analysis NP - copula - Prep-Phrase; in the terms of Chomsky (1965), the PPs in (112), (145) and (147) are V-Comps. Lakoff believes that his proposal to analyse prepositions as derived from verbals also leads to a more insightful treatment of sentences of the form NP - VP - Prep-Phrase, where the prepositional phrase is a VP-Comp (1965:IX-13 to 15). He dismisses the Chomskyan analysis of such sentences as (134), repeated here for convenience:

(134) John shot Bill near the house.



as failing to make explicit the native speaker's understanding of the question (154), which, in Lakoff's view, given 'normal intonation', queries not whether the shooting actually occurred -- that is taken for granted -- but rather the location of the shooting:

(154) Did John shoot Bill near the house?

(154) is therefore taken to be synonymous with the clefted form (155):



(155) Was it near the house that John shot Bill?

It is further claimed by Lakoff that, again given 'normal intonation', *not* in (156) negates not the VP (the shooting) but the PP (the location):

(156) John did not shoot Bill near the house.

and that (156) is thus equivalent to (157):

(157) It was not near the house that John shot Bill.

Lakoff's entire argument hinges on his use of the term 'normal intonation'. It must be presumed that Lakoff is using 'normal' in the sense of Halliday's 'unmarked', and 'intonation' in the sense of Halliday's 'tonicity', one of three subsystems of intonation recognized by Halliday (1967). In Halliday's polysystemic grammar, the information systems serve to organize discourse into 'information units' and to determine their internal structure. Each information unit may be subdivided into given and new elements. One of the central functions of tonicity is to realize this dichotomy of given and new. In particular, the 'tonic' falls on the last accented syllable of the last lexical item in the new element, called the 'information focus'. In the case of 'unmarked tonicity', the new element occurs at the end of the information unit; and, most importantly for our immediate purposes, what precedes the new element may be either given or new.

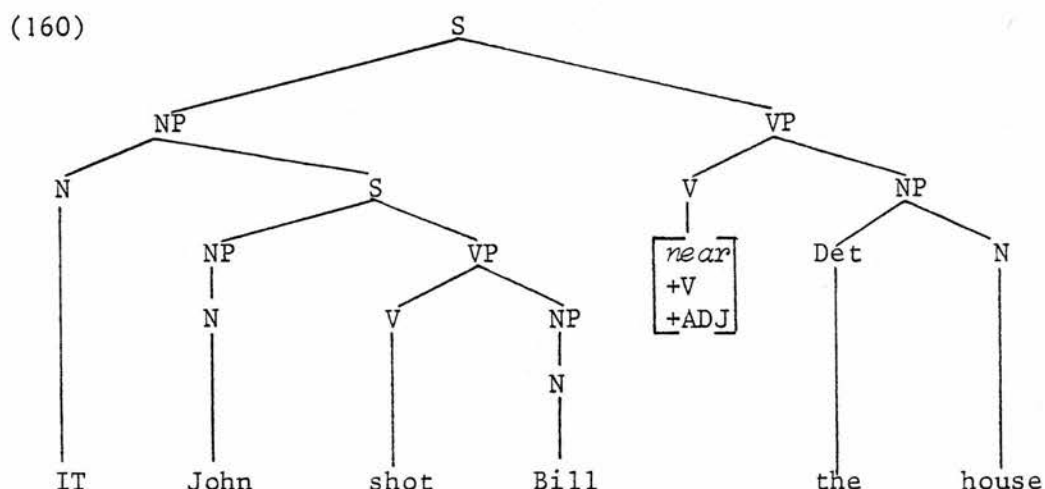
Consider (134) above as an 'information unit'. If it is divided into two elements, as in (158), the second of which is taken to contribute new information to the discourse:

(158) John shot Bill // near the house  
new

the tonic falls on *house* and we have an example of 'unmarked tonicity'. Now, it is important to realize, following Halliday, that the first element of the sentence, *John shot Bill*, is unspecified as regards the given-new opposition, i.e. it may contain either given or new material. Lakoff, however, in stating that (134) is synonymous with (159):

(159) It was near the house that John shot Bill.

and that both should be assigned the same deep structure, ignores the possibility that the first element of (158) could contain new information, in which case synonymy with the clefted form would not obtain. Similarly, Lakoff is unjustified in claiming that, given 'normal intonation' ('unmarked tonicity'), an utterer of (154) necessarily takes for granted ('given') that John's shooting Bill in fact occurred, since the first element of (154), *Did John shoot Bill*, is unspecified for given and new. Again, in (156), the first element *John did not shoot Bill* cannot be automatically assumed to contain given material. Thus, since there is no necessary synonymy between such sentences as (134) and sentences where the VP-Comp has been clefted forwards, as in (159), Lakoff has failed to provide satisfactory justification for his proposal to derive both from the same underlying structure (160):



Lakoff (1965) uses parallel arguments in Sections F-6 to F-8 to substantiate the claim that reason, instrumental and frequency adverbials should be analysed in the same way as place adverbials, i.e. by deriving them from 'higher sentences' in which the main clause of surface structure is embedded. But these arguments suffer from precisely the same flaw as those in support of (160) as the underlying structure of sentences containing place adverbials.

Another difficulty with Lakoff's proposal to derive both (134) and (159) from the same deep structure is that VP-Comps would then be the only clefted constituent (CC) not to be derived by a clefting transformation. There is considerable evidence to show that cleft-constructions involving nominals, such as (161) below, or V-Comps, such as (162) below, are transformationally derived from underlying structures resembling either simplex surface structures (cf. Lees, 1963) or surface 'psuedo-cleft' constructions (cf. Brown, 1969; Akmajian, 1970). The former approach would derive (161) from a structure akin to (163) and (162) from a structure akin to (165); the latter would derive (161) from (164) and (162) from (166):

- (161) It is the wife who decides.
- (162) It is to London that I am going.
- (163) The wife decides.
- (164) (The one) who decides is the wife.
- (165) I am going to London.
- (166) (The place) where I am going is (to) London.

The fact that there are regular correspondences between simplex, cleft and pseudo-cleft sentences suggests a unitary transformational treatment. There is an important semantic consideration further motivating a unitary analysis: in every case, the clefted constituent is the 'information focus' of the sentence, in the sense discussed above, and the following element invariably contains given material. Thus, in proposing that clefted VP-Comps be handled differently from all other clefted constituents, Lakoff is losing a valuable opportunity for generalization.

#### 2.1.3. Lakoff's analysis of instrumental adverbials

In a later paper (1968), Lakoff presents a series of arguments for deriving some instances of the preposition *with* from an underlying verb *use*. Although Lakoff's explicit purpose is to attack Chomsky's approach to the analysis of instrumental adverbials, it is interesting to note that Chomsky (1965:218-219) already mooted the possibility of deriving certain other uses of the preposition *with* from an underlying verb *have*:

It is also worth noting that many of the Manner Adverbials,

like many other Adverbials, are Sentence transforms with deleted Subjects. Thus underlying the sentence "John gave the lecture with great enthusiasm," with the Adverbial "with great enthusiasm," is the base string "John has great enthusiasm" (note that "with" is quite generally a transform of "have"), with the repeated NP "John" deleted, as is usual.

Lakoff's attention is focussed not on manner adverbials introduced by *with*, but on the use of *with* in instrumental adverbials modifying predications of purposive action. His arguments are designed to bring out the relationship between grammatical constructions of the forms (167) and (168):

(167)  $NP_1 - V - NP_2 - with - NP_3$

(168)  $NP_1 - use - NP_3 - to - V - NP_2$

where the indices mark co-reference. He shows, in a series of arguments, that both constructions have identical syntactic properties. In both (167) and (168), (a) V is non-stative (in Lakoff's terms,  $\boxed{+ACTIVITY}$ ); (b)  $NP_1$  is animate; (c)  $NP_2 \neq NP_3$ ; (d)  $NP_1 \neq NP_3$ , where  $\neq$  represents 'may not be co-referential with'; (e)  $NP_1$  may however be co-referential with  $NP_3$ , if  $NP_3$  is modified by an *as*-phrase; (f), (g) the interrogative and negative counterparts to these sentences involve the presupposition that  $NP_1 - V - NP_2$  is given and that the remainder

of the construction is new.<sup>1</sup> Lakoff further observes (h) that just as an instrumental adverbial cannot be added to (168) nor can (167) accept a further prepositional phrase introduced by *with*; (i) that, if such sentences as (169) are well-formed:

(169) John uses a knife to slice salami more often than I do  
so with a cleaver.

parallel structures would appear to underlie each clause; and, finally, (j) that, on the basis of the *do so*-test (cf. 1.2.1.5 above), *with* - NP in (167) must lie outside the VP and, for that reason alone, Chomsky's analysis, which takes instrumental adverbials to be part of the VP, must be erroneous. If, as in the Standard Theory, generalizations about selection restrictions, co-reference and transformational potential are stated at deep-structure level, then (167) and (168), Lakoff argues, must have essentially the same deep structure.<sup>2</sup> This

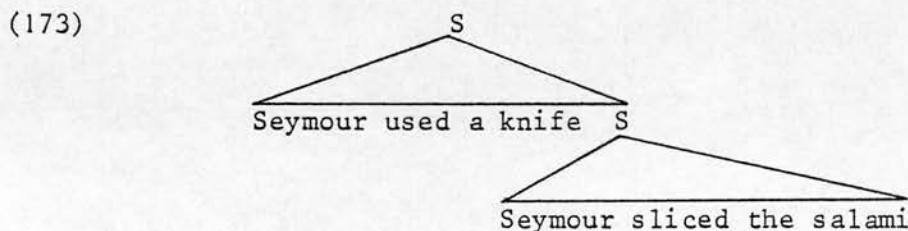
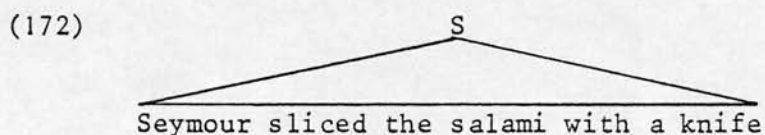
1. Arguments (f) and (g) suffer from the same flaw as those of Lakoff (1965) -- see 2.1.2 above -- and must therefore be discounted. Thus, for example, the classification of *with the knife* as new in *Did Seymour slice the salami with a knife* does not necessarily entail that it is given that Seymour sliced the salami.

2. Katz (1970) maintains that Lakoff misrepresents Chomsky (1965) and that his conclusion is consequently without foundation. It is however made quite clear (Chomsky, 1965:95) that selectional rules *are* introduced in deep structure, that relations of co-reference are also established there, and that deep structure also determines which transformations are to apply.

conclusion is linked to the analysis of instrumental adverbials given in Lakoff (1965) (see 2.1.2 above) in that (168) is taken to be more akin to the underlying structure of both constructions than (167). Thus the category 'instrumental adverbial' is no longer assumed to be a deep-structure category but is rather to be derived from a 'higher predication' with the verb *use*. In line with much current grammatical argumentation (cf. the discussion of Botha (1970) in 2.2.3 below), Lakoff offers no explicit indication of the appearance of the underlying structure he posits, nor does he state the transformational rules relating the two constructions. I therefore offer the following outline-analyses of the sentences (170) and (171): for Chomsky (172) underlies (170), and (173) underlies (171); for Lakoff, (173) underlies both sentences:

(170) Seymour sliced the salami with a knife.

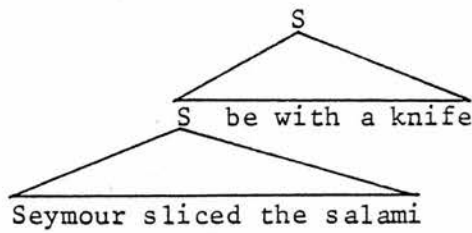
(171) Seymour used a knife to slice the salami.



Note that Lakoff (1968) therefore diverges in detail, if not in principle, from his 1965 analysis, i.e. (174):



(174)



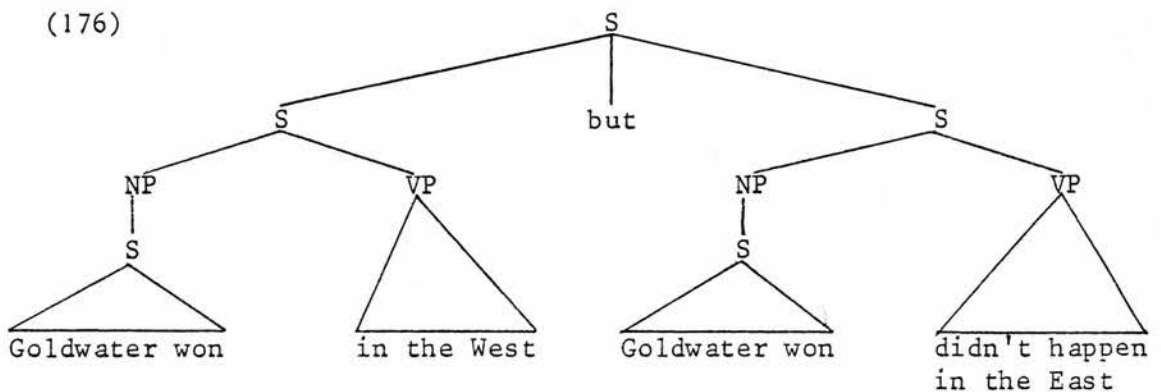
#### 2.1.4. Lakoff's argument from pronominalization

A further argument for deriving VP-Comps from 'higher predi-  
cations' is to be found in Lakoff (1970), where the sentence (175) is  
submitted to examination:

(175) Goldwater won in the West, but it didn't happen in the  
East.

Since the antecedent of the anaphoric *it*, which is a proform for NPs  
only, is clearly not *Goldwater won in the West*, but *Goldwater won*, it  
follows that *Goldwater won* must be an NP in its own right. Lakoff thus  
proposes (176) as the deep structure of (175):

(176)



Thus, if *in the West* must be analysed as a VP in deep structure, more  
weight is lent to the claim that the grammatical category 'place  
adverbial' does not figure as such in the underlying structure of



English sentences. Similar results to Lakoff's can also be obtained for VP-Comps of time on the basis of such sentences as (177):

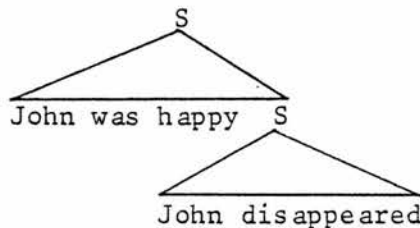
- (177) Nixon won in 1968, and it happened again four years later.

#### 2.1.5. Influence of Lakoff's proposals

Lakoff (1965, 1968, 1970) presents two major proposals relating to prepositional phrases: firstly, that PPs that are VP-Comps are derived from predications higher in deep structure than the clause containing the main verb of surface structure; secondly, that surface-structure prepositions are derived from underlying transitive adjectives, which are themselves taken to be a type of verb.

The first proposal has met with widespread acceptance among transformational grammarians. Some have extended his analysis to non-prepositional adverbials. Kuroda (1970) offers an account of manner-adverbs which involves the derivation of such sentences as *John disappeared happily* from a structure of the following type:

(178)



Schreiber (1971) assigns to 'sentence adverbs', i.e. adverbs modifying an entire sentence rather than a VP within that sentence, the same deep structure as underlies certain surface adjectival constructions.

Schreiber distinguishes two types of sentence adverb, namely 'modal adverbs' (*clearly, obviously, apparently, ...*) and 'evaluative adverbs' (*unfortunately, predictably, regrettably, ...*). The same deep structure is assigned to (179) as to (180), and to (181) as to (182); *possibly* is a modal adverb, and *ironically* an evaluative adverb:

- (179) Possibly Agnew loves Orientals.
- (180) It is possible that Agnew loves Orientals.
- (181) Ironically, Agnew loves Orientals.
- (182) Agnew loves Orientals and it is ironic that Agnew loves Orientals.

Other grammarians have added further arguments to those offered by Lakoff. Bach (1967:472) wishes to derive prepositional phrases from a 'second sentence' in order to account 'for the fact that there is no reasonable limit in the number of such adverbials in one sentence'. This solution, he believes, is preferable to incorporating in the base rules, as is done by Chomsky (1965:106), the claim that there cannot be more than two VP-Comps in any one sentence. That such a claim is fallacious is shown by the existence of such sentences as (183):

- (183) In all possibility, John saw me in town on Monday.

Geis (1970b:Ch. III) presents the following ingenious argument in support of Lakoff's proposal. Whereas no verb *must* be accompanied by a VP-Comp, each adverbial-type (except those paraphrasable by *while*-clauses) may co-occur only with a particular subset of verb-types. This fact could be accommodated in the Standard Theory, but only at the cost of introducing two major departures from that theory, namely

optional features on the verb (since adverbials may or may not be present) and disjunctive features on the verb (to block illicit combinations of adverbials). The alternative proposed by Geis is to utilize Perlmutter's independently motivated device of 'verb-verb restrictions' (cf. Perlmutter, 1969) and to assign features to the predicates underlying surface adverbials which select the type of verb which may occur in the clause they command in underlying structure.

Lakoff's second proposal has been given further weight by Becker and Arms (1969); I shall have occasion to discuss their paper below (4.3.2) as well as the criticisms it has aroused. Langacker (1973) also appears to accept Lakoff's proposal, since, in a review of Anderson (1971), he proposes an elaboration of Anderson's theory whereby prepositions 'might profitably be accorded a more abstract representation, perhaps as underlying predicates as in Lakoff (1970b)<sup>1</sup>'. Other grammarians, such as Langendoen (1970), Kastovsky (1973), and McCawley (1974) incorporate Lakoff's proposal without supporting argument, and Chafe (1970:158 ff.) talks of a set of 'locative verb-roots', which is essentially a list of what are usually thought of as locative prepositions.

## 2.2. Criticism of Lakoff's proposals

Although there has been much support for Lakoff's work on prepositional constructions, it has also been the target of considerable adverse criticism: from Chomsky (1971), defending the standpoint

1. By Lakoff (1970b), Langacker refers to the published version of Lakoff (1965).

of the Extended Standard Theory, from Langenbruch (1969), who is sceptical about the applicability of Lakoff's analysis to German, and from Botha (1970), who calls into question Lakoff's mode of argumentation.

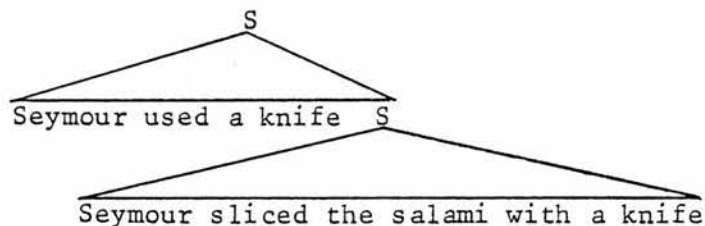
#### 2.2.1. Chomsky's counter-arguments

A formidable set of objections to Lakoff's proposal to derive VP-Comps from higher predications is to be found in Chomsky (1971:194-196), where four points are raised in criticism of Lakoff (1968). Chomsky's arguments are largely based upon the findings of Bresnan (1969). I have partially re-ordered them for ease of presentation.

##### 2.2.1.1. Chomsky's first argument

Chomsky explicitly adopts Bresnan's (1969) proposal that the underlying structure of (171) is not (173), but (184):

(184)



He then claims that one of the factors vitiating Lakoff's analysis is his failure to take account of the structures exemplified by (185) to (188):

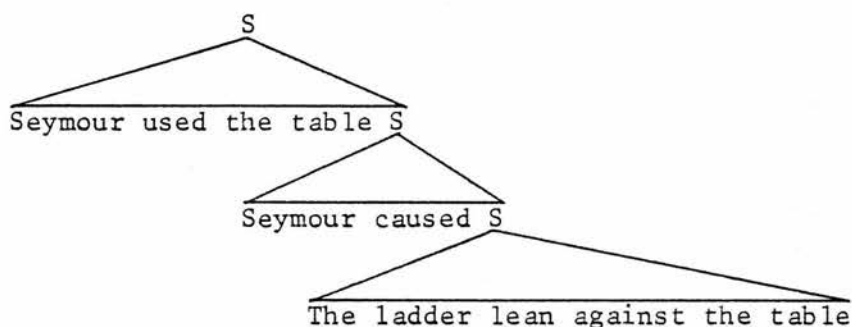
- (185) Seymour used the knife to slice the salami with.
- (186) Seymour used this table to lean the ladder against.
- (187) Seymour used this table to write the letter on.

(188) Seymour used this car to escape (make his getaway) in.

Chomsky believes that the type of analysis exemplified by (184) lends itself better to handling such structures as (185) to (188) by means of an NP-deletion rule, or, in the case of (171), a PP-deletion rule.

However, if (189) is taken to be the Lakoffian analysis of (186), one can deal with (186) to (188) by introducing an NP-deletion rule analogous to that proposed by Chomsky:

(189)



(185) appears to be a special case, and is indeed not fully grammatical to a number of speakers. It differs from the three other examples involving sentence-final prepositions in that *with* may be omitted without semantic loss. I would therefore propose that *with*, in such sentences as (185), is an optional element added by analogy with the construction exemplified by (186) to (188).<sup>1</sup> Although this solution

1. Indeed, the insertion of *with* appears to be an idiosyncratic fact about English. Whereas Italian, French and German all have constructions paralleling (186) to (188), cf. (i) to (iii):

(i) Seymour usò il tavolo per scrivervi sopra il romanzo.

(ii) Seymour s'est servi de la table pour écrire le roman  
là-dessus.

may appear clumsy, involving an optional minor rule of *with*-insertion, it is preferable to positing (184) as an underlying structure, one which violates the generalization observed by Lakoff (1968) (see 2.1.3 above) that a sentence involving an instrumental verb (*use, utilize, employ, ...*) may not also include an instrumental adverb. Thus, with the minor modification proposed, Lakoff's analysis still stands.

#### 2.2.1.2. Chomsky's second argument

Chomsky points out that there are no grammatical sentences with structure (167) corresponding to (186) to (188); in other words, there is no (190) corresponding to (186):

(190) <sup>+</sup>Seymour leant the ladder against with this table.

This objection may be readily countered by stipulating that the derivation of structure (167) is blocked when there is a prepositional expression within the complement of *use* in deep structure. The intro-

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(iii) Seymour benützte den Tisch, um darauf den Roman zu schreiben.

Italian and French have no construction analogous to (185), and German speakers feel that the insertion of *damit* is clumsy and redundant:

(iv) <sup>+</sup>Seymour usò il coltello per tagliare il salame con.

(v) <sup>+</sup>Seymour s'est servi du couteau pour couper le salami avec.

(vi) ?Seymour benützte das Messer, um damit die Salamiwurst zu schneiden.

duction of such an *ad hoc* constraint clearly constitutes a weakening of Lakoff's case. It will become apparent, however, that even more constraints will be necessary. Consider the following examples of Chomsky's:

- (191) John used his connections to further his career.
- (192) John used the classroom to propagandize for his favourite doctrines.
- (193) John used the mallet over and over again to reduce the statue to rubble.

For none of these sentences is there a corresponding sentence involving a PP introduced by *with*:

- (194) <sup>+</sup>John furthered his career with his connections.
- (195) <sup>+</sup>John propagandized for his favourite doctrines with the classroom.
- (196) ?John reduced the statue to rubble with the mallet over and over again.

From these data, it appears that the following environments disallow the transformation relating structures (167) and (168):

- A. NP<sub>3</sub> is  $\boxed{+ABSTRACT}$  (cf. (191) and (194))<sup>1</sup>
- B. NP<sub>3</sub> is  $\boxed{+ANIMATE}$  (cf. (191) and (194))<sup>1</sup>
- C. NP<sub>3</sub> denotes a location (cf. (192) and (195))

1. It is not clear whether *connections* is to be understood as  $\boxed{+ABSTRACT}$  ('relations with influential people') or as  $\boxed{+ANIMATE}$  ('influential friends'). I have therefore opted for two constraints.

D. *use* is modified by an adverbial (cf. (193) and (196))

Consider the following examples, which substantiate the validity of these constraints:

- (197) John used his strength to open the window.
- (198) <sup>+</sup>John opened the window with his strength.
- (199) Mary used her intelligence to solve the puzzle.
- (200) <sup>+</sup>Mary solved the puzzle with her intelligence.
- (201) Harry used his wife to gain prestige.
- (202) ?Harry gained prestige with his wife.
- (203) Gertrude used her son to keep her marriage intact.
- (204) ?Gertrude kept her marriage intact with her son.
- (205) Peter used his home-town to launch his programme.
- (206) <sup>+</sup>Peter launched his programme with his home-town.
- (207) Sally used the kitchen to prepare the meal.
- (208) <sup>+</sup>Sally prepared the meal with the kitchen.
- (209) The wrestler repeatedly used his favourite hold to break down his opponent's resistance.
- (210) ?The wrestler repeatedly broke down his opponent's resistance with his favourite hold.
- (211) The artist used the same brush-strokes time and time again to achieve perfect unity of style.
- (212) ?The artist achieved perfect unity of style time and time again with the same brush-strokes.

Note that, if (210) and (212) are grammatical, then they are still not synonymous with (209) and (211) respectively. In (209) and (211) it is



*use* that is modified by the adverbial (*repeatedly* and *time and time again* respectively); in (210) and (212), it is the verbs *break down* and *achieve* that are modified by these adverbials.

Constraints A, B and C may be taken together and reformulated as a general statement that *with*, as an instrumental preposition, must govern an NP denoting a concrete inanimate entity.<sup>1</sup> If Fillmore's (1968:24) definition of an instrument is adopted, namely as an 'inanimate force or object causally involved in the action or state identified by the verb', *with* can be thus regarded as representing 'unmarked instrumentality'. *Use*, on the other hand, may be a carrier of either 'unmarked instrumentality', in which case there will be a transformational relationship with sentences involving *with*, or alternatively of 'marked instrumentality', where the object of *use* denotes an instrument which is 'causally involved in the action or state identified by the verb' but is not a concrete, inanimate entity. Thus the constraints A, B and C may be generalized to a statement about two types of instrumentality in English.

Constraint D may be motivated as follows: when *use* is demoted to the status of a constituent of the clause which it commands in underlying structure, the adverbial modifying *use* is stranded in its deep-

1. This ties in with the observation which Fillmore (1968:24, fn. 32) attributes to Postal, that *snake* in *I rapped him on the head with a snake* must have 'in its underlying structure something equivalent to *with the body of a snake*', i.e. an NP denoting a concrete inanimate entity.

structure position, where it can only be interpreted as modifying the new main verb, i.e. the main verb of the underlying complement clause. Thus, in each of the sentences (193), (209), and (211), *use* is modified by an adverbial,<sup>1</sup> *over and over again*, *repeatedly*, and *time and time again* respectively; in the sentences formally related to these by transformation, namely (196), (210), and (212), these adverbials modify *reduce to rubble*, *break down*, and *achieve* respectively. It is these different modification phenomena which are responsible for the non-synonymy of the pairs of sentences considered. If structures (167)

1. I have followed Chomsky in presenting only adverbials of iteration, since the phenomenon under discussion appears most clearly in sentences containing such adverbials. I believe, however, that Constraint D holds generally for adverbials; cf:

- (i) I carefully used the whisk to beat the egg.
- (ii) I carefully beat the egg with the whisk. ( ≠ (i) )
- (iii) I often used cooking oil to fry steaks in.
- (iv) I often fried steaks in cooking oil. ( ≠ (iii) )

Indeed Chomsky observes that the following sentences involving the manner adverbial *carelessly* are not all synonymous:

- (v) John carelessly broke the window with a hammer.
- (vi) John broke the window carelessly with a hammer.
- (vii) John carelessly used a hammer to break the window.
- (viii) John used the hammer carelessly to break the window.

To me, each has a distinct meaning, paraphrasable as follows:

- (ix) It was careless of John to break the window with a hammer.  
( = (v) )

and (168) are to be related by transformation, Constraint D will have to be incorporated into the grammar.

#### 2.2.1.3. Chomsky's third argument

Consider (213) and (214):

(213) Did John use that chisel to sculpt the figure?

(214) Did John sculpt the figure with that chisel?

Chomsky points out that, given the presupposition that John used 'this hammer' and 'that chisel' to sculpt the figure, an affirmative answer must be given to (213), but a negative one to (214); in other words, the two questions are not necessarily synonymous. To counter this objection, it will be necessary to add a further constraint to the effect that:

E.  $NP_3$  can be followed by *and nothing else* without violating the presuppositions.

#### 2.2.1.4. Chomsky's fourth argument

Chomsky notes that Lakoff gives no indication how his approach

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(x) John broke the window in a careless manner with a hammer.

( = (vi) )

(xi) It was careless of John to use a hammer to break the window. ( = (vii) )

(xii) John used the hammer in a careless manner to break the window. ( = (viii) )

would accommodate the preposition *without* in such sentences as (215) and (216):

(215) Seymour sliced the salami without a knife.

(216) Seymour sliced the salami without using a knife.

The use of *without* exemplified in (215) may be explained as deriving from an underlying predicate *use* lying in the scope of the negative operator: this is justified by the paraphrase (217):

(217) Seymour didn't use a knife to slice the salami.

and by the possibility of giving a unitary account of the two prepositions *with* and *without* in their instrumental senses. In (216), *without* functions as a 'subordinating conjunction', in that it governs a sentential NP in deep structure. Unlike the uses of *with* and that of *without* discussed above, this conjunctive use of *without* involves no instrumental sense; rather it appears to be regularly paraphrasable by *and ... not*, as is shown by (218):

(218) Seymour sliced the salami and didn't use the knife.

Thus Chomsky's introduction of the conjunctive use of *without* is not germane to the issue, which concerns *with* and *without* as carriers of instrumentality. The treatment of *without* suggested here is a natural extension to Lakoff's analysis of *with*.

#### 2.2.1.5. Implications of Chomsky's critique

It may be concluded from my examination of Chomsky's critique of Lakoff (1968) that the introduction of a transformation relating

(167) and (168) is possible, but that this transformation will be subject to a number of constraints. Informally, it cannot apply (a) if there is a PP within the complement of *use*; (b) if NP<sub>3</sub> does not denote a concrete inanimate entity; (c) if *use* is modified by an adverbial; and (d) if NP<sub>3</sub> cannot be followed by *and nothing else* without violating the presuppositions.

#### 2.2.2. Langenbruch's criticism of Lakoff

Langenbruch (1969) asserts that there is no construction in German equivalent to (219):

(219) It is in the yard that I beat my wife.

(220) Ich schlage meine Frau auf dem Hof.

(221) <sup>+</sup>Es ist auf dem Hof, dass ich meine Frau schlage.

In more general terms, his claim is that prepositional phrases cannot function as cleft constituents (CCs) in German. There is thus not the same motivation, he maintains, to follow Lakoff (1965) and derive (220) from an underlying structure more akin to (221). For that reason, he feels that Lakoff's proposals cannot be regarded as valid for the analysis of VP-Comps in German. Langenbruch's claim fails, however, on both empirical and methodological grounds.

Firstly, he is unjustified in asserting that PPs cannot be CCs in German. I have found that informants do not reject such sentences as (221) out of hand. Presented with sentences containing PPs of frequency, reason, time, place, instrument and manner (cf. (222) to

(227)), informants gave generally favourable responses. PPs of direction (cf. (228)), which are invariably V-Comps, were however ruled out without exception:

(222) Es kam zu wiederholten Malen vor, dass er zu spät ankam.

(223) Es war infolge eines Autounfalls, dass er ins Krankenhaus eingeliefert wurde.

(224) Es war nach dem Essen, dass ich mich unwohl fühlte.

(225) Es war in der Küche, dass ich sie sah.

(226) Es war mit dem Hammer, dass er das Fenster zerschlug.

(227) Es war mit grosser Sorgfalt, dass er den Text vorlas.

(228) <sup>+</sup>Es war in die Stadt, dass er gefahren ist.

Informants generally found sentences with frequency adverbials in clefted position (with *vorkommen*, *geschehen*, and *passieren*, but not with *sein*)<sup>1</sup> most acceptable and reason adverbials as CCs also evoked

1. It is questionable whether (222) really is a cleft sentence: firstly, it can be regarded as an 'extraposed' version of *Dass er zu spät ankam, kam zu wiederholten Malen vor*; secondly, discussions of cleft sentences in English have considered only sentences opening with *it BE* to be examples of the cleft construction. Brown (1969), however, treats *What happened was that Floyd broke the glass* as one of several clefted versions of *Floyd broke the glass*, where the verb introduced by the clefting transformation is *happen*, translationally equivalent to *vorkommen*, etc.

little negative response.<sup>1</sup> Time adverbials were preferred to place adverbials, but both were more readily accepted than instrument and manner adverbials, which were adjudged only barely acceptable. Inversion improved the acceptability-rating of all the data-sentences: thus (229) was consistently preferred to (225), and similarly for other adverbial-types:

(229) In der Küche war es, dass ich sie sah.

Moreover, inversion combined with proadverbialization or the 'W-transformation' always resulted in more acceptable sentences:

(230) Dort war es, dass ich sie sah.

(231) Wo war es denn, dass du sie sahst?

As is pointed out by Gottschalk (1976), the insertion of such modal particles as *doch* or *vielleicht*, or of the negative particle *nicht*, or indeed a combination of the two (*vielleicht nicht*, *doch nicht*) markedly improves the acceptability of such sentences as (222) to (227) above. In such cases, the cleft construction serves the purpose of delineating the scope of the modal particle. Consider (232):

(232) Ich habe sie *doch* in der Küche gesehen.

The scope of *doch* is not clear: (232) could be glossed either as 'I *did*

1. It is indicative that Bartsch (1972:19) quotes *Es war wegen eines Briefs, dass Hans schon vor zwei Wochen abreisen musste* as an example-sentence (in a rather different connection) with no comment about its acceptability as a sentence of German.



see her in the kitchen', where both *in der Küche* and *gesehen* are in the scope of *doch* or as 'It was in the kitchen that I saw her', where only *in der Küche* is in the scope of *doch*. In (233), however:

(233) Es war *doch* in der Küche, dass ich sie gesehen habe.

only the second reading is possible: the scope of *doch* is restricted to *in der Küche*.

Thus Langenbruch's claim that prepositional phrases cannot occur as CCs in German is too strong: it is admittedly a marginal construction, but the fact that it does occur constrains the grammarian to take account of it. A second point is that the alleged non-occurrence of such sentences as (221) does not constitute adequate justification for rejecting a Lakoffian deep structure for (220). Deep structure is definable as an abstract level of grammatical description at which all syntactic generalizations relevant to the sentence it represents are stated. When, in order to capture some syntactic generalization, it is necessary to posit a deep structure (DS) which is more complex (in the sense of containing more clauses) than the surface structure  $SS_1$ , the existence of another  $SS_2$  which is derived from the same deep structure DS and which is 'similar to' DS (in that it is derived with a minimum of deletion and permutation transformations) may be regarded as an argument for that deep structure. On the other hand, the absence of a surface structure  $SS_2$  'similar to' DS does not count as an argument against that deep structure, since it is not a defining property of a deep structure to have a surface-structure correlate. Thus Langenbruch fails to show that Lakoff's analysis is inapplicable



to German: indeed, it will emerge below (Chap. V) that there are advantages to be drawn from an analysis of German VP-Comps as deriving from higher predications.

### 2.2.3. Botha's criticism of Lakoff

Botha (1970) takes issue with the kind of argument put forward by Lakoff (1968) -- cf. 2.1.3 above -- in support of his claim that there is no deep-structure category of instrumental adverb in English. Lakoff is fully aware of the extent to which his approach differs from that of previous syntacticians:

Due to the nature of the definition of deep structure, one can provide arguments for the identity of deep structures without proposing what these deep structures are and without proposing any transformational derivations. This type of argument differs considerably from the type of argument that has been used in transformational research so far. To date, research in transformational grammar has been oriented towards proposing rules. Arguments concerning generalizations of deep structure, selectional restrictions and co-occurrences have been brought up only in support of some given set of rules. What we have done is to show that arguments of this sort can be used by themselves without discussion of rules at all. (1968:24)

The fact that the new approach outlined by Lakoff has now become almost standard practice indicates the importance of Botha's comments.

Following Toulmin (1958), Botha claims that any substantive argument must contain six components:

- (i) a claim or conclusion
- (ii) data, i.e. facts in support of (i)
- (iii) a warrant, i.e. the licence for inferring (i) from (ii)
- (iv) a qualifier, i.e. a statement specifying the force of (iii); the omission of (iv) implies the qualifier 'necessarily'
- (v) conditions of rebuttal, i.e. statements making (iv) explicit; the presence of (v) is thus dependent on that of (iv)
- (vi) a backing, i.e. a general theoretical validation of (iii)

Having set out this schema, Botha proceeds to an assessment of Lakoff's mode of argumentation. Each of the arguments in Lakoff (1968) is shown to have no qualifier (and therefore no conditions of rebuttal), which implies that they are intended to hold necessarily. More importantly, Botha stresses that the arguments lack any explicit warrant authorizing the inference of the conclusion from the data. Although suitable warrants can be deduced without difficulty, Botha observes that a sound backing for such warrants, anchored in unassailable linguistic principles, is nowhere to be found in Lakoff's paper, nor indeed anywhere in the 'tradition' to which Lakoff's paper is designed as a contribution. Given the present, and presumably enduring lack of undisputed, fully motivated linguistic principles, Lakoff's arguments, and similar grammatical argumentation, cannot be considered to represent an adequate 'confirmation procedure'. In other words, the

conclusions cannot be regarded as 'correct on the intersubjective level' (Botha, 1970:11).

There would, however, be little justification for claiming that the points made in Lakoff's paper -- or in any other linguistic work written in the same vein -- are invalidated by Botha's criticisms. The fact that there is no uncontroversial general theory of language available to linguists at the present time is no reason to suspend all work in linguistics. Indeed, it appears ill-advised to imagine that such a definitive theory could ever emerge. Grammatical argumentation is not designed to *prove* anything, but aims rather either to provide support, or in Botha's terms, 'sustenance' for a hypothesis or to refute (or at least challenge) an aspect of a hypothesis previously regarded as reasonable. If this grammatical argumentation is to be persuasive, however, some principles of validation will have to be devised.

### CHAPTER III

#### PREPOSITIONAL PHRASES AND NOUN PHRASES

##### 3.1. Introductory remarks

In Chapter II, I discussed the proposal made by Lakoff, and supported by several others, that a large number of prepositional phrases are the surface-structure realization of underlying transitive verb-phrases, the preposition deriving from the verb and the governed NP from the object. Other grammarians have proposed that PPs are a subclass of noun phrases and are dominated by an NP node in deep structure. These grammarians seek, in Fillmore's words (1969: 361), to 'render unnecessary the distinction in English grammar between noun phrase and prepositional phrase'. This is the common factor linking three sets of proposals which I intend to call (a) the transformationalist approach, (b) the case-grammar approach, and (c) the denominal approach. These three approaches will be discussed in turn in 3.2, 3.3, and 3.4.

##### 3.2. The transformationalist approach

###### 3.2.1. Prepositions from features

Postal (1971:45) makes the following proposal:

I would suggest that in the deepest structures there are no prepositions and that at a later stage they are all added to NP. Later rules then delete some of them under certain conditions. The distinction between prepositional phrase

and NP is thus purely superficial.

Postal does not specify the details of the assignment of prepositions to NPs, which is effected by a transformation he calls Prep-Insertion, and, elsewhere in the same work (1971:206), confesses that:

... the actual shape of the preposition associated with a particular NP is determined by many factors in ways I do not pretend to understand fully. Obviously, the lexical head of the NP, its logical relation to verbal elements, lexical properties of the verbal head and other factors play a role. I will not deal with this fundamental and difficult problem here.

In their textbook of transformational grammar, Jacobs and Rosenbaum (1968:138) propose that prepositions be taken to originate as features of 'noun segments', i.e. of complex symbols dominated by an N node. They imply that these features are separated from the complex symbol and form another complex symbol to be adjoined to the remainder of the noun segment. Thus, for example, the verb *approve* is subcategorized to require an object noun containing the feature  $[\pm of]$ . The process involved is analogous to the segmentalization transformation proposed by Postal (1966) to account for pronouns in English.

A slightly different, but clearly related proposal is made by McCawley (1971:220), who claims that 'most prepositions originate as parts of verbs, so that prior to a transformation which adjoins the prepositional part of the verb to its object, a verb-plus-PrepP

combination has the form Verb-plus-NP'. What McCawley appears to be suggesting is that certain features on verbs (he indicates (1968a:260) that this is indeed what is meant by 'parts of verbs') be extracted by a segmentalization process and adjoined to the object NP in such a way as to form a PP.

All three proposals agree in claiming that the prepositional phrase as such is not a category of deep structure, but comes into existence through the transformational assignment of prepositions to underlying noun phrases. Where the proposals differ is in the precise source of the prepositions. Before discussing the source of the transformationally introduced prepositions, however, let us consider the principal arguments for an approach equating PPs and NPs at least at some level of derivation.

As shown above, Postal (1971) claims that all NPs have an added preposition at one stage in their development. This preposition is regularly deleted when the NP is in subject position, and generally so after 'a verbal form which is not adjectival' (Postal, 1971:207), although the exceptions to this latter condition are legion in both English and German (*jealous of NP*, *interested in NP*, *anxious about NP*; *eifersüchtig auf NP*; *interessiert an NP*; *besorgt um NP*). Jacobs and Rosenbaum (1968) also propose such deletion rules, on the grounds that the deleted prepositions are frequently 'revealed' in nominalization; Ross (1973) similarly states that 'almost all superficially non-prepositional NPs show up in other syntactic contexts with prepositions associated with them'. Thus, to take an example from German, the

nominalization of (234) as (235) 'reveals' a preposition *zu* associated with *dich* in (234):

(234) Ich liebe dich.

(235) Meine Liebe zu dir.

Similarly, the nominalization of (236) as (237) indicates that a preposition *an* is associated with *Sie* in (236):

(236) Man bittet Sie.

(237) Eine Bitte an Sie.

Such 'hidden' prepositions, it is argued, are deleted when nominalization does not occur. An alternative explanation, whereby the prepositions are held not to be present in deep structure but introduced in the process of nominalization is rejected by Jacobs and Rosenbaum on the grounds that two transformational rules would then be required, one for sentences which have a preposition associated with an object NP in deep structure, as in (238) and (239), and another for those which do not, as in (240) and (241):

(238) Ich verzichte auf Hilfe.

(239) Mein Verzicht auf Hilfe.

(240) Ich erwarte Erfolg.

(241) Meine Erwartung auf Erfolg.

Miller (1972) presents an argument from Russian for assigning prepositional features to the 'predicator', which are *copied* onto nouns marked as [+LOCATIVE] and realized as prepositions in much the way proposed by McCawley. Miller claims, as an advantage of this proposal,



that a natural explanation is given for the occurrence of the prefix *v-* on verbs which are in construction with prepositional phrases involving the preposition *v*:

(242) Mal'čik vbežal v komnatu.

Boy into-ran into room

'The boy ran into the room'

(243) Ptica vletela v gnezdo.

Bird into-flew into nest

'The bird flew into the nest'

(244) Studenty vxodili v auditoriju.

Students into-were-coming into lecture-hall

'The students were coming into the lecture-hall'

Miller suggests that the *v*-prefix is a realization of the feature  $[\bar{+}into]$  in the verbal complex symbol. The well-formedness of (245) Miller sees as further evidence for a prepositional feature  $[\bar{+}into]$  on the 'predicator':

(245) Mal'čik vbežal.

Boy into-ran

'The boy ran in'

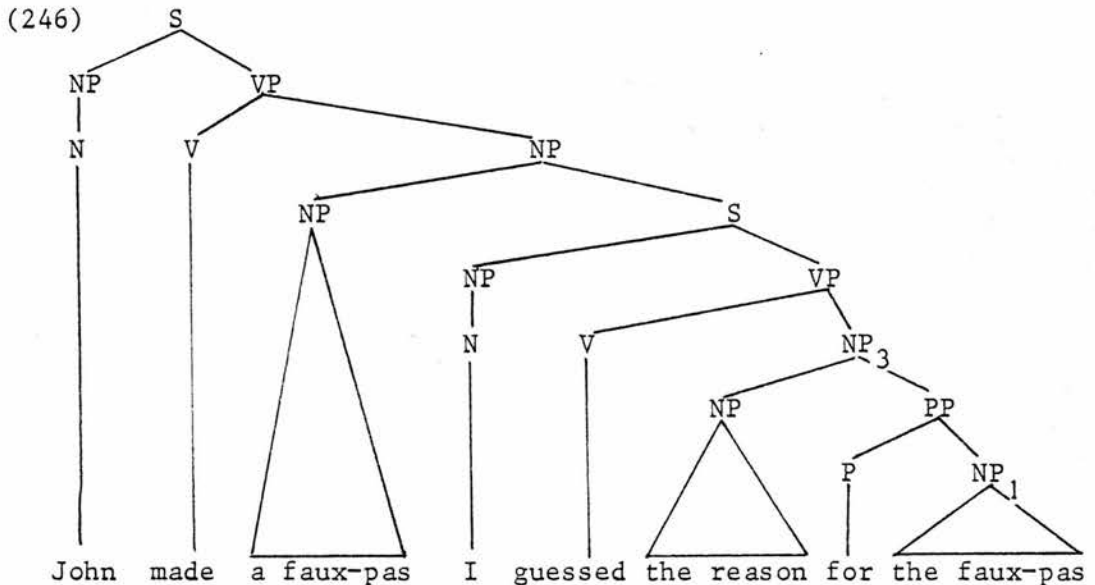
A third argument, formulated in Jacobs and Rosenbaum (1968), Postal (1971) and Ross (1973), relates to Ross's 'Pied Piping Convention' (Ross, 1967:114) and to Postal's 'Cross-Over Principle' (Postal, 1971 *passim*). These two 'global constraints' (cf. Lakoff, 1971:234) are most simply stated if NPs and PPs are treated as categorially identical. Consider for example the Pied Piping Conven-



tion, which Ross formulates as follows (1967:114):

Any transformation which is stated in such a way as to effect the re-ordering of some specified node NP, where this node is preceded or followed by variables in the structural index of the rule, may apply to this NP or to any non-co-ordinate NP which dominates it, as long as there are no occurrences of any co-ordinate node, nor of the node S, on the branch connecting the higher node and the specified node.

As an example of an underlying structure to which this convention applies, consider (246):



Now, given that (247) is grammatical, resulting from the relativization of  $NP_1$ :

(247) John made a faux-pas which I guessed the reason for.

then it follows, from the Convention, that (248), which involves the

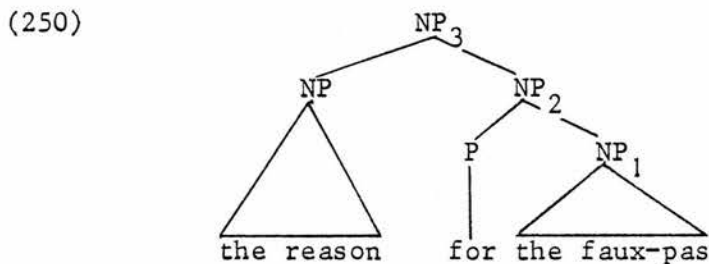
moving forward of  $NP_3$ , a non-co-ordinate NP dominating  $NP_1$ , will also be grammatical:

(248) John made a faux-pas the reason for which I guessed.

As it stands, however, the Convention cannot account for the grammaticality of (249), which results from the moving forward of the PP dominated by  $NP_3$ :

(249) John made a faux-pas for which I guessed the reason.

Rather than replace every occurrence of the expression 'NP' in the Convention with 'NP or PP', Ross and Postal reanalyse PPs as NPs, so that underlying *the reason for the faux-pas* is a structure of the following type:



When the Convention has (250) to operate upon, it readily accounts for the grammaticality of (249).

The Cross-Over Principle discussed in Postal (1971) prohibits the application of any rule that moves an NP across a co-referential NP. It turns out that it is also inadmissible for a PP to move across an NP co-referential with the governed NP of that PP. Consider (251) and (252):

(251) It is tough for Mary to see herself.

(252) It is tough for Mary to look at herself.

Now, just as (253) below is ungrammatical by virtue of the prohibited cross-over of two co-referential NPs, so is (254), in which an NP is fronted, and also (255), which involves the fronting of a PP. Further examples of the parallel restrictions on the movement of NPs and PPs are found in (256) to (261):

(253) <sup>+</sup>Herself is tough for Mary to see.

(254) <sup>+</sup>Herself is tough for Mary to look at.

(255) <sup>+</sup>At herself is tough for Mary to look.

(256) <sup>+</sup>Mary is tough for herself to see.

(257) <sup>+</sup>Mary is tough for herself to look at.

(258) <sup>+</sup>Mary is tough for at herself to look.

(259) <sup>+</sup>She<sub>i</sub> is tough for Mary<sub>i</sub> to see.

(260) <sup>+</sup>She<sub>i</sub> is tough for Mary<sub>i</sub> to look at.

(261) <sup>+</sup>At her<sub>i</sub> is tough for Mary<sub>i</sub> to look.

The explanation for such phenomena follows directly, Postal claims (1971:99), if it is recognized 'that prepositional phrase nodes should properly be taken as NP'.

There is thus considerable evidence in favour of the analysis of PPs as underlying NPs which are transformationally converted into PPs. There remains the question of determining the source of the prepositions attached to underlying NPs, and, more specifically, of discovering which sentence-elements govern the choice of any one preposition in a

given environment. Postal admits, as shown above, that he is unclear about this matter: he suggests a number of factors which he takes to play a role in determining the choice of preposition to be inserted before every NP, so that the resultant picture is rather complex. A simpler solution is provided on the one hand by Jacobs and Rosenbaum (1968) and on the other by McCawley (1971): the main verb fully determines the selection of the prepositions occurring before NPs in the same clause. Jacobs and Rosenbaum differ from McCawley in assigning the proposed prepositional features to the noun that is to be preceded by the preposition rather than to the verb itself. McCawley's proposal is the simpler of the two, since, in analysing (262):

(262) John approves of her behaviour.

Jacobs and Rosenbaum will require not only to put a feature  $[\pm of]$  on the NP *her behaviour* but also to subcategorize *approve* with respect to object NPs containing  $[\pm of]$  as a feature. McCawley's approach, however, necessitates only a feature on the verb, and therefore, in the light of the simplicity criterion, must be adjudged the better proposal.

All three proposals suffer, however, from one major difficulty. If it is proposed to formalize co-occurrence restrictions and to mark these on the verb, the only way of accounting for varied possibilities and impossibilities such as those exemplified in (263) below is to introduce an immense number of selectional features, and thereby to defeat one of the very purposes of transformational grammar, which seeks to generate an infinite number of sentences with maximally

simple means:

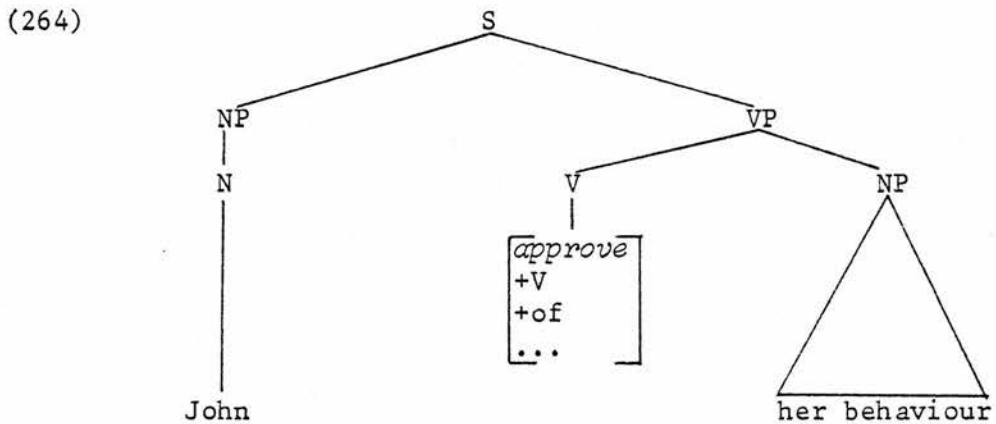
- (263) I drove the car
- to work.
  - with reckless abandon.
  - for ten minutes.
  - at his request.
  - in spite of its bad condition.
  - ∅
  - +without exception.
  - +in a loud voice.
  - +since the war.
  - . . .

Moreover, as is pointed out by Geis (1970a, 1970b), it will also be necessary to mark all these features as optional, which will be tantamount to introducing into transformational grammar a novelty requiring independent justification.

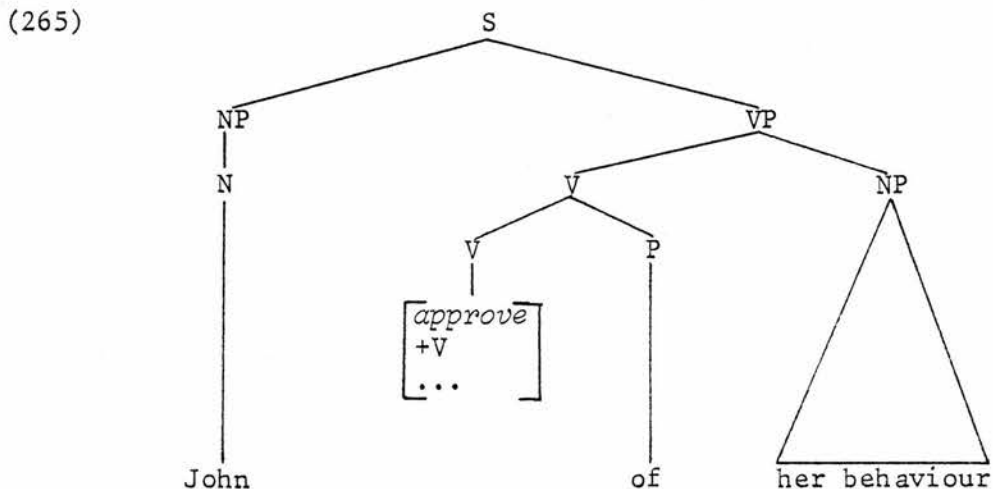
These problems do not arise, however, in the case of prepositional objects (POs) -- cf. 1.2.3 above -- where the choice of preposition is uniquely constrained by the verb and where the verb + preposition combination functions semantically as a transitive verb. Thus, for example, if *approve* is to be followed by a PO, the preposition chosen may only be *of*; the resultant combination *approve of* is equivalent in function to a transitive verb (an approximate synonym is *sanction*). There is no requirement for a large number of optional verb-subcategorization features, but merely for one feature  $[+of]$ , which is obligatorily realized as a prepositional constituent. Treating the 'translative preposition' (cf. 1.2.3 above)

as deriving from a feature on the verb captures the fact that the verb fully determines the form of the preposition and also allows the semantic component to interpret the verb + preposition combination as a unit. I therefore suggest that McCawley's proposals be retained, but only for prepositional objects; prepositional complements will have to be given an analysis which brings out the non-predictability of their prepositions.

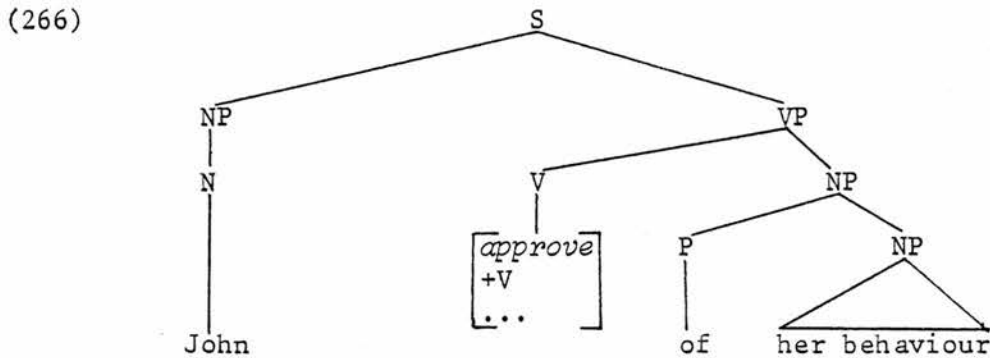
If some such structure as (264) is taken to underlie (262):



it will be necessary to postulate a preposition-creation transformation resulting in (265):



and also a preposition-assignment transformation which Chomsky-adjoints the preposition to the object NP, giving (266):

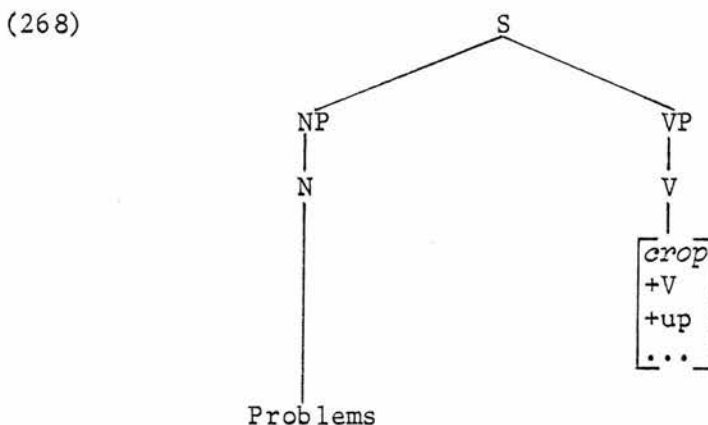


Chomsky-adjunction, which creates a new node NP dominating the preposition and the object NP, is preferable to sister-adjunction, which would result in the preposition being a sister of both V and NP, because the surface-structure string Translative Preposition + NP is clearly a constituent and should therefore appear as such in the derived tree. It is clearly controversial whether the string P + NP should be dominated by NP rather than PP, but in view of the arguments of Postal and Ross discussed above, there would seem to be good reason to equate PP and NP for the purpose of constraints on movement transformations and therefore to accept that P + NP may be dominated by NP. In further defence of this proposal, note that the derived structure brings out the status of POs as objects rather than complements and also that there are no later transformations applicable to POs that require PP to appear in the structural index, since the presence of an immediately preceding preposition suffices to identify the construction. To clarify this last point, consider that the proadverbialization transformation converting *of that* to *thereof*, the agreement transformation (in simple terms) converting *to he* to *to him*,

and the morphological processes whereby some prepositions in French and German are fused, optionally in German, obligatorily in French, with certain immediately following definite articles (French *à* + *le* > *au*; German *zu* + *der* > *zur*) can all be readily stated in terms of the juxtaposition of P and NP, without any reference to the labelling of the immediately dominating node. Thus the derivation of prepositional objects that has been proposed here is well supported.

In 1.3.1.2 above, it was pointed out that translatable prepositions and non-literal particles are highly similar as regards their syntactic properties, differing only according as the verb with which they co-occur is transitive or intransitive respectively. The proposed formalism for POs handles this parallelism easily, in as much as non-literal particles can be analysed as resulting from the preposition-creation transformation when the verb is intransitive. Consider (267) and its underlying structure (268):

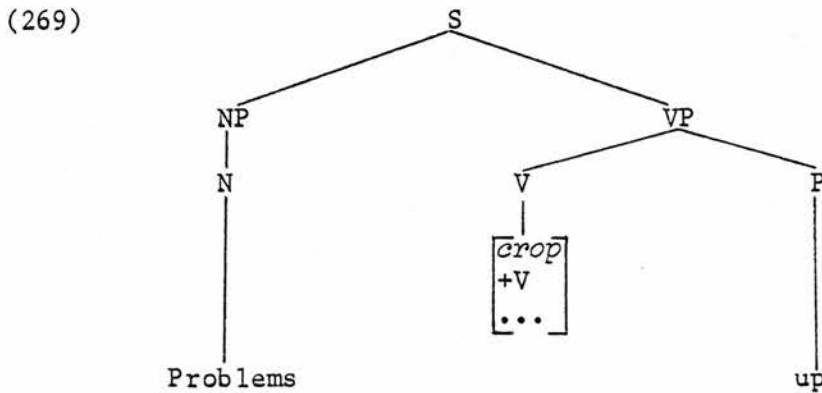
(267) Problems crop up.



In (268), the complex symbol dominated by V contains a feature [+up] which is expanded by the preposition-creation transformation to give



the derived structure (269):



The proposal that both translatable prepositions and non-literal particles are dominated by the same node P in derived structure has the advantage of squaring with the observation of Emonds (1972) and Jackendoff (1973) that the sets of particles and prepositions are largely co-extensive (cf. 1.3.1 above).

The proposals that have been made here will re-appear, in modified form, but unchanged in principle, in the discussion of German translatable prepositions in 5.3.2 below. Before I turn to the 'case-grammar approach', I wish to consider the relationship between the 'transformationalist approach' and a well-established dichotomy in traditional and structuralist syntax.

### 3.2.2. Major and minor parts of speech

Throughout the history of grammatical investigation, one of the most frequently recurring distinctions has been that between 'major' and 'minor' parts of speech:

Only the major 'parts of speech' (nouns, verbs, adjectives, and adverbs) were meaningful in the proper sense of the term: they 'signified' the objects of thought which constituted the 'matter' of discourse. The other 'parts of speech' (prepositions, conjunctions, etc.) did not 'signify' anything of themselves, but merely contributed to the total meaning of sentences by imposing upon them a certain 'form', or organization. (Lyons, 1968:273)

This dichotomy is to be found not only in Aristotelian grammar but also in many structuralist accounts of grammar. It is particularly evident in the work of Fries (1952), who distinguishes 'lexical meaning' from 'structural meaning', ascribing the former to major parts of speech and the latter to minor parts of speech. To Fries, prepositions are 'function words' which 'must be learned as separate items signalling particular structural meanings' (1952:108). As is pointed out by Lyons, elements with 'structural' (or 'grammatical') meaning are also characterized as constituting a closed set, i.e. one 'of fixed, and usually small membership' (1968:436).

The same view of prepositions as 'minor parts of speech' is discernible in the 'transformationalist approach' discussed in 3.2.1 above. Firstly, prepositions, being transformationally derived from features, are not listed in the lexicon: they therefore must be presumed to have no lexical meaning, but rather structural meaning like articles, tense affixes and the like. Secondly, the proposal to derive prepositions from features implies that the 'transformationalists' take

prepositions to form a closed set, since it is a requirement of the base component of a transformational grammar that the rules stating the possible combinations of features in complex symbols should specify a finite number of possibilities. This again suggests that prepositions, constituting a closed set, are held to be structural rather than lexical items.

This view of prepositions is unacceptable for two reasons. In the first place, it is manifestly obvious that non-translative prepositions do have semantic content: consider, for example, the sense-relations holding between the prepositions of German as discussed in Ch. V below. If prepositions were mere empty function-words, moreover, such sentences as the following would be synonymous:

(270) The cat crawled onto the table.

(271) The cat crawled under the table.

While this of course understood by the 'transformationalists', they have no way of representing the contrast in meaning except in terms of two lexical items CRAWL ONTO and CRAWL UNDER. The consequences are obvious: an enormous number of V + P lexemes and a total lack of generality in the statement of the meaning of sentences involving V + PP syntagms. In the second place, the implication that the set of prepositions is finite is highly dubious. Quirk and Mulholland (1964) have shown that prepositions do not form a well-defined class set off from all other items, but:

... that there is a continuum or gradient, and that in fact it is largely through the productive power of the

sequence  $\overline{P} + N + P, JLM$  that we keep the form-class  
'preposition' open-ended in English. (1964:65)

This claim has prompted Bugarski's (1968:236) comment that 'English prepositions are a strange offspring of the association of grammar with lexis'. Thus, given that the prepositions of English constitute an open rather than a closed set, it is manifest that a representation in terms of a finite set of features will be ultimately inadequate.

The conclusions to be drawn from this examination of the 'transformationalist approach' to the analysis of PPs are (a) that it is necessary to lose the distinction between NPs and PPs, at least at some stage in the derivational process, and (b) that the 'transformationalist approach' is valid only for the analysis of prepositional objects, but not of prepositional complements or VP-complements. The 'case-grammar approach' to be discussed in 3.3 recognizes the correctness of (a) but also offers a possible solution to the analysis of PCs and VP-Comps.

### 3.3. The case-grammar approach

#### 3.3.1. Prepositions realizing case-relations

By the 'case-grammar approach' to the analysis of prepositional phrases, I mean in particular the proposals to be found in Fillmore (1968, 1969, 1971) and Anderson (1971, 1972, 1975). Case-grammarians (i.e. scholars working within this framework) regard prepositions and case-affixes on nominals as exponents of 'case-relations' in underlying structure. These case-relations are contracted by nouns and 'express

the nature of the 'participation' in the 'process' or 'state' represented in the sentence (or noun-phrase)' (Anderson, 1971:10). The number of case-relations that will have to be posited is taken to 'form a specific finite set' (Fillmore, 1968:5) and to reflect 'a set of universal, presumably innate, concepts' (Fillmore, 1968:24). The processes whereby the set of case-relations is mapped onto the sets of prepositions and affixes in various languages are assumed to be regular. Fillmore's rules for English prepositions may be represented as follows (adapted from Fillmore, 1968:32):

- (272) Agentive  $\longrightarrow$  *by*
- (273) Instrumental  $\longrightarrow$  *with* / if Agentive is also present  
Instrumental  $\longrightarrow$  *by* / otherwise
- (274) Objective  $\longrightarrow$   $\emptyset$
- (275) Factitive  $\longrightarrow$   $\emptyset$
- (276) Benefactive  $\longrightarrow$  *for*
- (277) Dative  $\longrightarrow$  *to*
- (278) Locative  $\longrightarrow$  {*at, in, on, beside, ...*}
- (279) Time  $\longrightarrow$  {*at, in, on, during, ...*}

The translative prepositions that characterize prepositional objects clearly fall outside this system. Fillmore however allows for 'specific objects [to] have associated with them certain requirements for preposition choice that are exceptions to the above generalization' (1968:32). The essence of this proposal is therefore that the original preposition assignment, made in accordance with rules (272) to (279), may be changed according to the idiosyncratic requirements of certain verbs: these requirements will have to be registered in the

lexical entry for the verb in question. This is merely a variant of the proposal discussed in 3.2.1, according to which translative prepositions originate from features on the verbs which require them. Thus the analysis of prepositional objects does not present a difficulty for the 'case-grammar approach'.

Case-grammar also lends itself to the analysis of prepositional complements (those V-Comps where the preposition does have semantic content). The 'transformationalist approach', it will be recalled, was incapable of accounting satisfactorily for the meaning of prepositions in PCs. This difficulty does not arise with case-grammar, which handles the meaning of such prepositions in two ways. Firstly, those prepositions which are the sole exponents of underlying case-relations (in English, *by*, *with*, *for*, *to*, and potentially others) are adequately defined by the case-relations which they realize -- these case-relations are themselves defined in the metalanguage of case-grammar (cf. Fillmore, 1968:24-25). Secondly, those prepositions which are members of a many-member set of exponents of a case-relation, such as those introduced by rules (278) and (279) above, are, according to Fillmore (1968:32), freely selected from the lexicon. Thus locative and time prepositions are listed in a case-grammar lexicon. Fillmore's proposals therefore represent an improvement on McCawley, Jacobs and Rosenbaum and Postal's proposals in that they allow the meaning of non-translative prepositions to be represented in the grammar, either in terms of a finite set of metalinguistically defined case-relations, or as items in the lexicon. A further advantage of treating a large number of prepositions as lexical items is that the open-endedness of



the class of prepositions (inexplicable by the 'transformationalists') may be accounted for in terms of lexical items gradually changing the category to which they belong.

Let us now consider the treatment of VP-Comps in case-grammar. Fillmore (1968) handles the distinction between locative V-Comps and locative VP-Comps in terms of 'highly restricting locatives' and 'weakly restricting locatives' respectively. He offers no definitive answer to the question whether 'weakly restricting', or 'outer' locatives belong, in underlying structure, to the propositional constituent ('a tenseless set of relationships involving verbs and nouns' -- Fillmore, 1968:23) or to the modality constituent (which 'will include such modalities on the sentence-as-a-whole as negation, tense, mood and aspect' -- Fillmore, 1968:23).

If outer locatives are assigned to the propositional constituent,<sup>1</sup> this imposes an analysis of certain sentences that

1. This appears to be the solution favoured by Fillmore. He claims (1968:26, fn. 34) that the appearance of 'outer L' and of 'B(enefactive)' is dependent on that of A(gentive). The only way of stating this dependency relation between cases economically would be for outer L, like B, to figure in the proposition. Unfortunately, this argument is vitiated by the fact, pointed out by Anderson (1975: 27), that outer L does not require the co-presence of A:

(i) Fred died in his bed.

(ii) The butter melted in the cupboard.

infringes one of the most fundamental constraints on the underlying structure of a case-grammar, namely that in the propositional component 'no case category appears more than once' (Fillmore, 1968: 24). Consider, for example, (280):

(280) He stood on the table in the dining-room.

where *on the table* is a V-Comp (or highly restricting locative) and *in the dining-room* is understood as a VP-Comp (or weakly restricting 'outer' locative) and not, for the purposes of the present argument, as a postmodification of *table*. If *on the table* and *in the dining-room* are both analysed as locative constituents of the underlying proposition, the one-case-per-proposition constraint, which is otherwise well-motivated,<sup>1</sup> is violated. The constraint could be saved by analysing outer locatives and highly restricting locatives as two different cases, but, in as much as cases are distinguished semantically in the defining metalanguage, it would appear inadmissible to set up two (or more) synonymous, but syntactically differentiated case categories.

The alternative is to assign outer locatives to the modality component (M). Pak's (1974) criticism of the proposal to 'modalize' outer locatives, namely that 'it follows ... that all cases, adverbial or not, may be modalized [since] there is no way to determine

1. Cf. Anderson (1975), who examines this constraint in the light of criticisms to which it has been subjected, and finds it valid for all but equative sentences.



conclusively which should be case and which should be modality' (1974: 34) is misguided, since the tests available for distinguishing V-Comps from VP-Comps (cf. 1.2.1 above) may be employed for discriminating between weakly restricting and strongly restricting cases. Fillmore does in fact allow for cases to figure in M:

It is likely ... that certain 'cases' will be directly related to the modality constituent as others are related to the proposition itself, as for example certain temporal adverbs. (1968:32)

If, with 'certain temporal adverbs', Fillmore is referring to VP-Comps of time, it would appear well motivated to situate outer locatives (VP-Comps of place) in M also. This apparent solution is however based on an equivocal use of the term 'case'. Although the internal structure of M is never made very clear in Fillmore's writings,<sup>1</sup> what is unquestionable is that it does not contain the main verb, which is anchored in the proposition. The function of case-relations is however to associate noun-phrases with the main verb. It is therefore very hard to see how NPs dominated by a case-node could be present in M, since there is no direct syntactic relation between these NPs and the main verb.

In a footnote, Fillmore (1968:23, fn. 29) suggests that such adverbs as *unfortunately*, *willingly*, *easily*, and *carefully* should be

1. For an elaboration of the modality constituent in a case-grammar of German, see Esau (1973b).

derived from superordinate sentences (cf. Schreiber's (1971) proposals discussed in 2.1.5 above). This proposal is extended in Fillmore (1971) to VP-Comps of place and time: these are treated as being embedded in underlying structure in higher sentences containing as their main verb *occur* or *happen*. Carried to its logical conclusion, this proposal obviates the difficulties inherent in assigning case-nodes to M. Fillmore (1972) analogously proposes analysing adverbials as 'disguised' embedding verbs and specifically endorses Lakoff's (1968) proposal that *with*-phrases be derived from underlying structures containing the verb *use* (despite Fillmore's (1968) analysis of Instrumental as one of the case categories that may appear in the propositional constituent). This incorporation of Lakoffian proposals into case-grammar is also favoured by Anderson (1972), who treats locative, temporal, reason and 'some manner' adverbials as derived from a higher predication. Indeed, Anderson's model of case grammar has no modality constituent: in general terms, all the categories which Fillmore has appear in M are assigned by Anderson to superordinate predications. This solution has several advantages over Fillmore's (1968) proposals: it avoids Pak's (1974) objection that the modality constituent is little more than a 'semantic dump' for phenomena that cannot be easily handled in the propositional constituent (in Pak's pregnant formula,  $M = S - P$ ); it provides a natural representation for the variable scope of negators, interrogative forms, quantifiers, adverbials, etc. in terms of the relative position of superordinate predications; it replaces the unmotivated catenation of M and P ( $S \rightarrow M + P$ ) with a unified representation, in which the relative position of the various categories, propositional and non-propositional, in the underlying

structure, must be motivated on syntactic and semantic grounds.

Thus it appears that the 'case-grammar approach' is capable of giving a satisfactory analysis of the three major types of prepositional phrase: prepositional complements are treated as NPs contracting a case-relation with the main verb; prepositional objects as PCs with idiosyncratic preposition-changing rules; and VP-Comps as deriving from predications superordinate to the proposition containing the main verb of surface structure. This analysis of VP-Comps is an adaptation of the analysis proposed by Lakoff and favoured by many 'generative semanticists' (cf. 2.1.5 above). Before progressing to the 'denominalist approach' to the analysis of prepositional phrases, I wish to consider another way in which case-grammar may be brought closer to generative semantics.

### 3.3.2. Case-relations as atomic predicates

In both Fillmore and Anderson's models of case-grammar, the case-relations are defined as hypothetical universals of linguistic theory, whereas lexical items are assigned a meaning-representation in the lexicon. One of the major aims of generative semantics has been to discover whether, by decomposing lexical items into minimal components of meaning ('atomic predicates'), it can be shown that there is a limited number of semantic universals and that many lexical items realize ('result from the lexicalization of') a complex underlying structure built up from these universal atomic predicates. Thus it has been suggested that KILL lexicalizes a structure *CAUSE(BECOME(NOT(* *ALIVE)))* (McCawley, 1968b) and that FORGET lexicalizes *BECOME(NOT(KNOW))*

(de Rijk, 1974).<sup>1</sup> One possible application of this hypothesis to case-grammar is to treat case-relations not as theoretical entities defined in the metalinguistic foundations of the grammar, but as belonging to the set of atomic predicates. According to this re-interpretation of case-grammar, the case roles of NPs will be *deducible* from the underlying configurations in which they appear, rather than being *stated* by means of case-nodes. Among the atomic predicates which have been proposed by Mönnich and Schwarze (1971) as equivalents for the case-relations made familiar by Fillmore (1968) are:

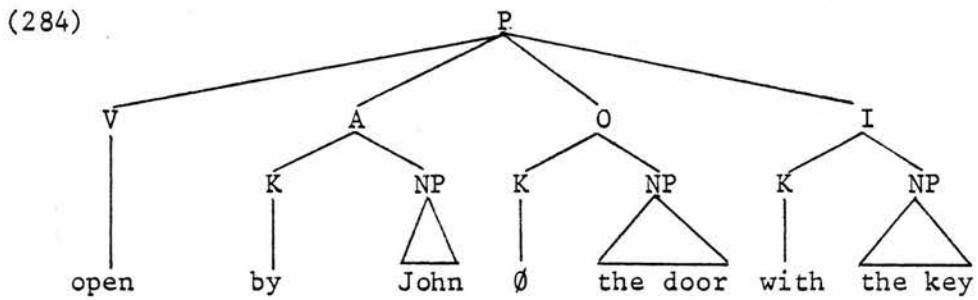
Agentive	:	<i>CAUSE</i> or <i>RESPONSIBLE</i>
Instrumental	:	<i>USED (FOR)</i>
Objective	:	$\emptyset$
Dative	:	<i>IS FOR</i>

Consider now an application of this proposal to an analysis of the propositional constituents of the following sentences:

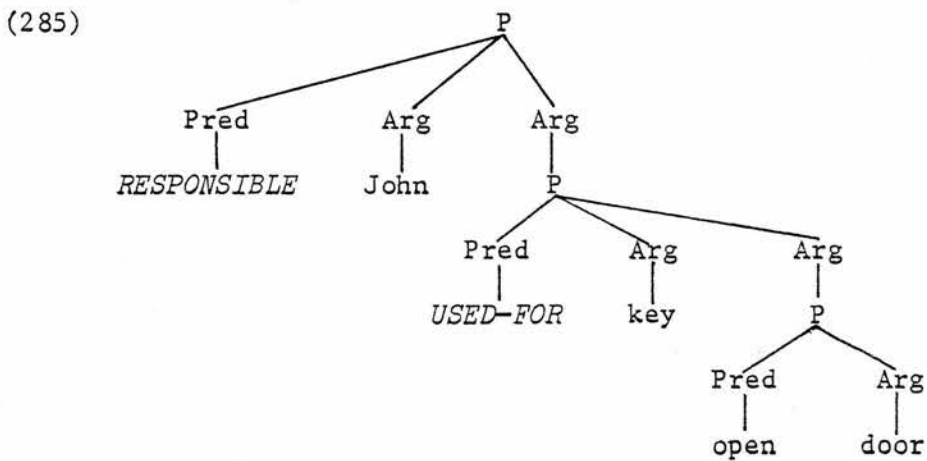
- (281) John opened the door with the key.
- (282) John opened the door.
- (283) The door opened.

Whereas Fillmore (1968) would analyse (281) as follows:

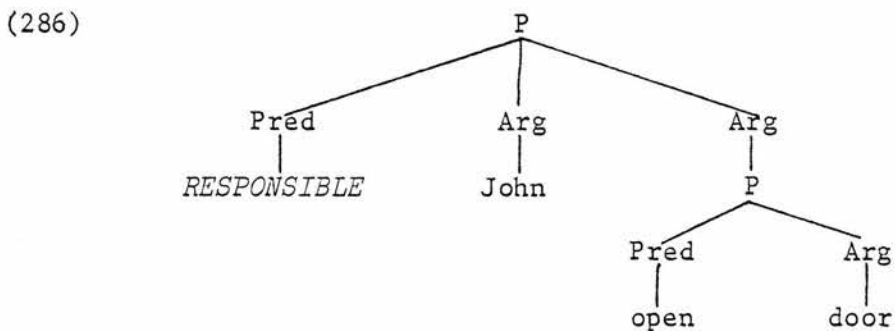
1. Atomic predicates will be indicated henceforth by italic capitals.



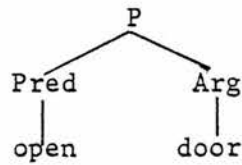
an analysis in terms of atomic predicates would appear as follows:



The fact that *John* is agentive follows from its being the first arg(ument) of the predicate *RESPONSIBLE*; that *key* is instrumental is deducible from its being the first argument of *USED-FOR*; and that *door* is objective follows from its being the only argument in its proposition (irrespective of the identity of the predicate). (282) is analysed as (286), and (283) as (287):

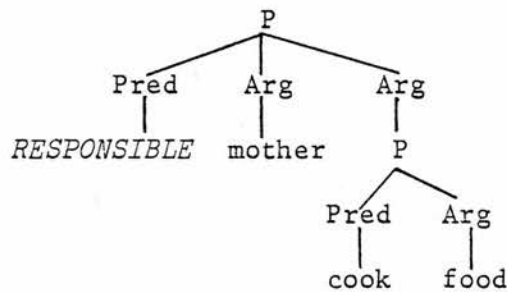


(287)

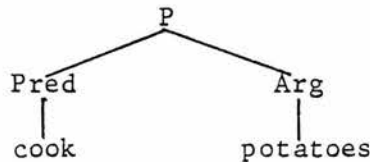


Thus, to each case-node in Fillmore's model there corresponds a proposition with an appropriate predicate. The major advantage of this approach over Fillmore's is, to my mind, that it offers a natural explanation for the fact that *The potatoes are cooking* differs from *Mother is cooking* (sc. *some food*) not only in the different case-roles of the subjects (objective and agentive respectively) but also as regards the semantic content of the verb. Whereas Fillmore (1968:29) allows only one 'semantic description' of *cook*, the alternative analysis makes clear that *cook* may lexicalize either 'cook' or 'RESPONSIBLE(cook)':

(288)



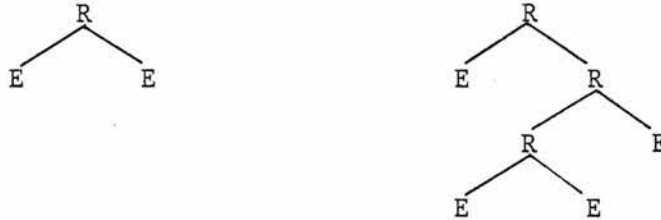
(289)



Similar proposals, in rather different frameworks, have been made by Kilby (1973b) and King (1974). Kilby's base structures are dependency trees and are characterized by 'relational elements' (R), realized as verbs, prepositions, or case-markers; these govern either

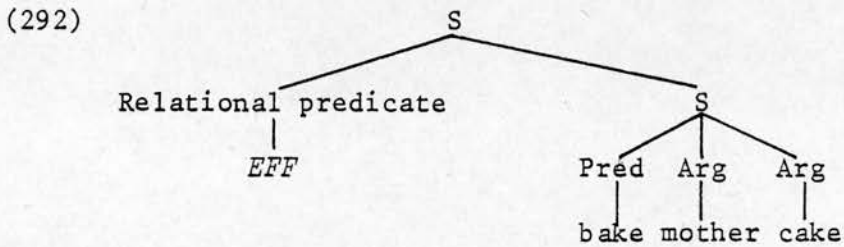
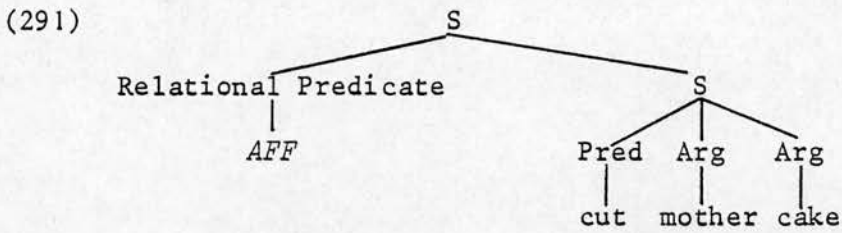
'non-relational elements' (E), which are realized as nominals of various kinds, or, to allow recursion, further relational elements. Thus, trees of the following types are permitted:

(290)

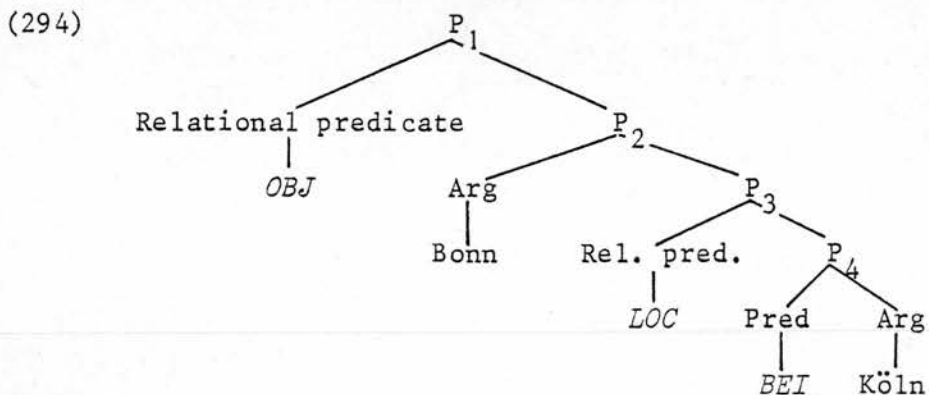
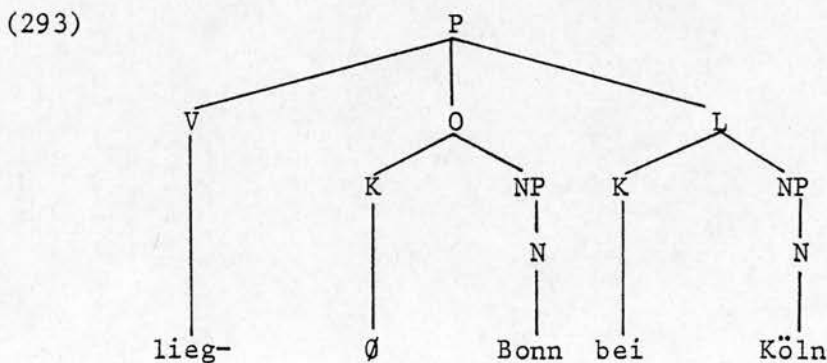


Kilby initially proposes a maximum of three relational elements, NOM(inative), LOC(ative), and ERG/ABL (ergative/ablative), corresponding exactly to the best-motivated case-relations in Anderson (1971); these are later replaced by two relational elements, LOCATIVE and DYNAMIC, which, in conjunction with a negative operator, account for all the case-relations recognized by Anderson. Kilby's relational elements, which are essentially predicates, perform the same function as the various predicates proposed by Mönnich and Schwarze; his model is thus a dependency variant of the constituency model sketched above. King's proposals, which are couched in constituency terms, derive from the work of Brekle (1970) and Fillmore (1968, 1971). Brekle modifies the underlying structures of generative semantics by introducing 'relationale Prädikate', which are predicated of propositions in order to specify the semantic relations between the predicate and the argument(s) of that predicate in each proposition: thus, for example, the difference between *Mother cut the cake*, which involves an 'objectum affectum', and *Mother baked the cake*, which has an 'objectum effectum', is represented as follows:





King proposes seven relational predicates, *OBJ*, *DAT*, *AGT*, *EXP*, *INST*, *LOC*, and *BEN*, which are defined in very much the same way as the identically named case-relations in Fillmore (1968). These are then integrated into a semantic analysis of German prepositional expressions. Thus, (293) below, which is a Fillmorean analysis of the propositional content of *Bonn liegt bei Köln* is reformulated by King as (294):





Note, however, that King's proposals are weaker than those sketched out above on the basis of Mönnich and Schwarze's suggestions: firstly, although King claims that his underlying structures are semantic representations, semantically dyadic predications, such as  $P_4$  in (294), involving the locative relation  $BEI(x,y)$ , are shown as monadic; secondly, King's structures are relatively uneconomical in specifying the unmarked objective case-relation as a relational predicate, as against Mönnich and Schwarze, who define objective as the case-relation associated with all but a specified set of predicates.

What is common to all the proposals discussed here, irrespective of their relative merits, is that the case-nodes argued for by Fillmore and Anderson are replaced by predicates or elements equivalent to predicates. The result is an interesting *rapprochement* of generative semantics and case-grammar: if generative semanticists accept that it is essential to capture case-relations in underlying structure, and case grammarians accept that case-relations are expressible as predicates, the two approaches to grammatical description turn out to be notational variants of each other.<sup>1</sup> In the modified versions of case grammar discussed here, prepositions ultimately derive from underlying predicates: independent arguments for the validity of this derivation will be presented in Chapter IV below.

1. For a comparison of the relative adequacy of case grammar and generative semantics, see Kilby (1973a).

### 3.4. The denominal approach

It will be recalled that Fillmore (1968) proposed that locative prepositions were freely selected from the lexicon, where they are stored under the category 'preposition'. In the course of the same paper, he suggests (1968:81) a different source for locative prepositions:

We might wish to say that certain 'locational' nouns take an adnominal L [ocative]. These nouns sometimes name parts of the associated objects, as in 183, and they sometimes identify a location or direction stated with reference to the associated object but not considered a part of it, as seen in 184. 'Nouns' of the second type appear superficially as prepositions in English.

183. corner of the table, edge of the cliff, top of the box

184. behind the house, ahead of the car, next to the tower

This suggestion has been taken up (and extended to nouns of the first type) by other case grammarians and by grammarians working within a lexicalist framework.

Anderson (1971:81) holds that Locative is not directly realized by a preposition, but rather that:

... 'prepositional' distinctions can be considered ... to involve (underlying) nominals -- *beside, in front of*, etc.

Kilby (1973b:187) claims, in similar vein, that:

... every superficial preposition + noun construction which alternates with another prepositional construction with the same noun will have as underlying structure a parameter-conditioning noun (*inside*, *top*, ... ) and the noun that appears on the surface.

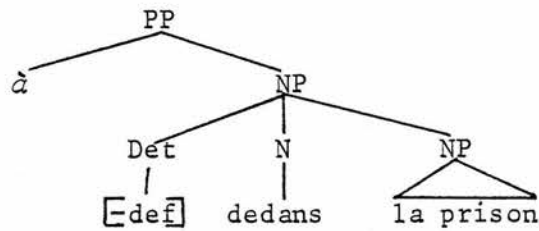
Thus, when the parameter-conditioning noun is *inside*, the surface preposition is, in English, *in* or *inside*; when it is *top*, the surface preposition is *on* or *on top of*.

Similar claims are made for French by Ruwet (1969) and for German by Boeder (1973), both within a lexicalist framework (cf. 1.3 above). Ruwet claims that  $\bar{a}$  is present in the deep structure of all French PPs of place, but that underlying all other locative prepositions is a noun of the type identified by Kilby as 'parameter-conditioning' (*dessus*, *dessous*, *devant*, *derrière*, ... ). This proposal, he maintains, brings out the distinction between  $\bar{a}$ , a simple subordination marker,<sup>1</sup> and other prepositions, all of which contribute to semantic interpretation; it explains why  $\bar{a}$  may not be co-ordinated with other prepositions (though not why the same restriction holds for *de*!); and it accounts for the fact that both  $\bar{a}$  + NP and  $\text{Prep}_{\text{loc}}$  + NP are proadverbialized by *y* -- this is also not

1. This underspecifies the semantic content of  $\bar{a}$ , which may signal either locativity or allativity, but never ablativity. In the latter case, it must be replaced by *de*. Consequently,  $\bar{a}$  must be more than a mere marker of subordination.

entirely correct, since *de* + NP (as in *Je reviens de Paris*) is proadverbialized by *en*, not *y*. Ruwet, on this somewhat unsound basis, adapts Chomsky's (1970) proposals for a lexicalist base component and treats the parameter-conditioning noun as the head of the governed NP and the NP which will appear in surface structure as its complement. Thus, *dans la prison* is analysed as follows:

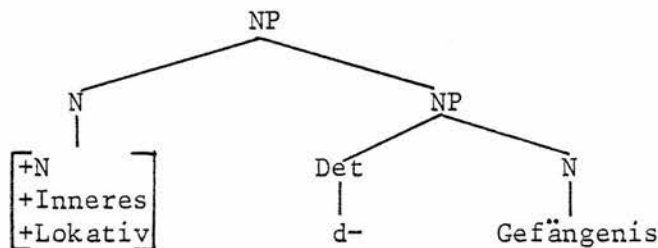
(295)



If  $[+def]$  is chosen under Det, *au dedans de la prison* is generated: no motivation for this idiosyncratic use of the feature  $[+def]$  is given.

Boeder (1973) improves upon Ruwet's analysis, dispensing with the dubious determiner (which is introduced merely to satisfy the requirement, in the lexicalist framework of Chomsky (1970), that every head be preceded by a specifier) and also with the semantically unmarked preposition. Thus, his analysis of *im Gefängnis* would be as follows:

(296)



All the proposals discussed here have involved the derivation of prepositions from locative, 'parameter-conditioning' nouns. This 'denominal' approach has two major advantages: firstly, it appears to offer a plausible underlying structure for such syntagms, often treated as 'complex prepositions' (cf. Quirk and Mulholland, 1964), as *because of*, *in place of*, *by virtue of*, *for the sake of*, *at the expense of*, etc.; secondly, although it might appear to give an unwarrantably complex account of 'simple' one-word prepositions in Western Indo-European languages, there are many other languages which are characterized by PPs whose surface-structure constituency is very similar to the underlying structures proposed by the 'denominalists'.<sup>1</sup> The disadvantage of the 'denominal' approach is, to my mind, that it fails to give formal expression to the *relational* nature of the preposition which will be discussed at length in Chapter IV. To give the same analysis, as Boeder (1973) does, to *das Innere des Gefängnisses* and *im Gefängnis* is to obscure the fundamental difference between the place-naming function of *das Innere*, which may occur as an autonomous noun-phrase, and the linking function of *in*, which may occur only with two noun-phrases, expressing the locative relation between their referents. The analysis of the preposition to

1. Cf. Sapir (1921:118): 'Instead of saying "he looked into the glass" we may say "he scrutinized the glass-interior". Such expressions are stilted in English, because they do not easily fit into out formal grooves, but in language after language we find that local relations are expressed in just this way'.

be found in Chapters IV and V is designed to formalize the relational function of the preposition; it will be shown (5.2.4) that the range of locative meanings covered by the set of prepositions (in Contemporary Standard German) can also be adequately handled within such an analysis.

## CHAPTER IV

### THE PREPOSITION AS A PREDICATE

#### 4.1. Introductory remarks

In this chapter, I shall put forward several arguments in favour of accounting for the relational nature of the preposition by analysing the non-translative preposition as a type of predicate. In successive sections, I shall produce arguments of different kinds to support my proposal: in 4.2, from the morpho-syntax of German; in 4.3, from semantics, again with particular regard to German; and in 4.4, from the consideration of aspects of certain non-Indo-European languages. Taken together, these various arguments suggest that there is a strong case for regarding prepositions, not only in German, but indeed in all languages in which they occur, as predicates of a particular type.

#### 4.2. Arguments from German morpho-syntax

##### 4.2.1. Determination of case-forms

In many languages, Indo-European and non-Indo-European, prepositions share with transitive verbs the characteristic of determining the inflexional behaviour of dependent NPs. In German, there are four sets of surface case-markers: nominative, accusative, genitive, and dative. In a simple sentence containing a verb, a subject and only one object, the subject appears in the nominative, whereas the object may appear in any of the three other surface cases.



Which of the three is chosen is determined entirely by the idiosyncratic properties of the verb, so that *lieben* requires the accusative, *gedenken* the genitive, and *helfen* the dative:

- (297a) Sie liebt mich.
- (297b) <sup>+</sup>Sie liebt meiner.
- (297c) <sup>+</sup>Sie liebt mir.
- (298a) <sup>+</sup>Sie gedenkt mich.
- (298b) Sie gedenkt meiner.
- (298c) <sup>+</sup>Sie gedenkt mir.
- (299a) <sup>+</sup>Sie hilft mich.
- (299b) <sup>+</sup>Sie hilft meiner.
- (299c) Sie hilft mir.

I believe it is mistaken to claim that the verb also determines the choice of the nominative case-inflexions of the subject-NP, since the occurrence of those inflexions results from the processes by which an NP is chosen to act as subject. These processes of 'subjectivization' are not fully understood at present, but are assumed to involve considerations of thematization and discourse structure, lexical properties of the main verb and also, in case grammar, a hierarchy of case relations. These factors are however not relevant for determining which of the three sets of case-inflexions will characterize the object of any given transitive verb. In this respect, I cannot therefore agree with Tesnière (1959) and Heringer (1970), proponents of 'valency grammar', who attribute the same status to NPs in the nominative case as to NPs in other cases, namely as 'actants' dependent on the main verb. I thus maintain the traditional



distinction between the *casus rectus* and the *casus obliqui*.<sup>1</sup>

Just as transitive verbs determine which of the oblique case-inflexions will characterize the object NP, so every German preposition selects the case in which the governed NP will appear.<sup>2</sup> Like the objects of transitive verbs, governed NPs may not appear in the nominative, but in any of the oblique cases:<sup>3</sup>

- (300a) Sie denkt an mich.
- (300b) +Sie denkt an meiner.
- (300c) +Sie denkt an mir.
- (301a) +Das liegt nicht innerhalb meine Befugnisse.
- (301b) Das liegt nicht innerhalb meiner Befugnisse.
- (301c) +Das liegt nicht innerhalb meinen Befugnissen.
- (302a) +Er lebt auf grossen Fuss.
- (302b) +Er lebt auf grossen Fusses.
- (302c) Er lebt auf grossem Fuss.

1. For a valency grammarian who supports this position, see Engelen (1975:105-108).

2. There are of course exceptions: the choice of accusative or dative after *an*, *auf*, *hinter*, *in*, etc. is co-determined by (a) the V-Comp or VP-Comp status of the prepositional phrase and (b) the motional or non-motional character of the verb. But cf. 4.3.4.1 below.

3. In English, similarly, only oblique pronouns may appear after prepositions. It might further be argued that some prepositions of English are also comparable to verbs in (optionally) taking

This property is shared by German 'transitive adjectives' (for this term, cf. 2.1 above):

- (303a) Er ist keinen roten Heller wert.
- (303b) <sup>+</sup>Er ist keines roten Hellers wert.
- (303c) <sup>+</sup>Er ist keinem roten Heller wert.
- (304a) <sup>+</sup>Sie ist das eingedenk.
- (304b) Sie ist dessen eingedenk.
- (304c) <sup>+</sup>Sie ist dem eingedenk.
- (305a) <sup>+</sup>Sie ist mich gehässig.
- (305b) <sup>+</sup>Sie ist meiner gehässig.
- (305c) Sie ist mir gehässig.

The parallel morphosyntactic properties of verbs, adjectives and prepositions in determining case-affixes on dependent nominals may be economically accounted for if all three are taken to be categorially identical, if all three are, as I would suggest, assigned to the category 'predicate'.

#### 4.2.2. Transitivity

As seen in 1.3.1.2 above, prepositions and verbs may be

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prepositional objects. In various dialects of English, the prepositions *off*, *inside*, *outside* and *apropos* require the governed NP to be preceded by *of*; moreover, *except* often (especially sentence-initially) appears as *except for*, and *opposite* may also occur as *opposite to*. The optional preposition is always translatable.

plausibly regarded as sharing the syntactic property of transitivity. Whereas Fraser (1965) distinguishes between prepositions and particles and indeed produces tests for identifying items as one or the other, Emonds (1972) and Jackendoff (1973) re-analyse the distinction as one between transitive and intransitive prepositions. I have suggested above (1.3.1.2) that there is in fact a tripartite division into transitive, pseudo-intransitive and pure intransitive prepositions, a trichotomy which is directly paralleled in the category of verbs.<sup>1</sup> Since both categories will require the same range of subcategorization features with respect to object NPs, the grammar will be simpler if verbs and prepositions are treated as belonging to the same category.

#### 4.2.3. Word order

Those transformational studies of German that have assumed a fixed order of elements in underlying structure have been characterized by a considerable degree of controversy as to what that order should be. The unmarked order of subject, verb, and object in surface-structure main clauses is SVO, but in subordinate clauses SOV. It might naturally be assumed that the word order of main clauses should be taken as 'basic' (i.e. as corresponding to deep-structure word-order), given that main clauses may occur without subordinate clauses, but not *vice versa*. Considerable evidence has been brought forward, however, in support of the proposition that the unmarked order of elements, which, it is assumed, should characterize deep structure, is that manifested in the

1. Cf. also Becker and Arms (1969).

surface structure of subordinate clauses and that this order (SOV) should be generated by the base rules of a transformational grammar of German.<sup>1</sup> It will become apparent below that the controversy over underlying word-order in German sheds interesting light upon the status of the preposition in that language; I shall therefore devote some space to a discussion of the various proposals that have been made in this regard.

The 'SVO-hypothesis', the claim that underlying word-order is identical to that found in main clauses, has been defended by Ross (1967, 1970), who asserts that the operation of the gapping-transformation in German, namely forwards in main clauses but either way in subordinate clauses, necessitates analysing German as underlyingly SVO, since forwards is the unmarked direction and there is a general cross-linguistic constraint that SVO-languages (Ross instantiates English) gap forwards and SOV-languages (e.g. Japanese) gap backwards. Maling (1970), however, points out that 'backward gapping' is nothing but one of the manifestations of the independently motivated transformation Conjunction Reduction and therefore claims that all gapping rules operate forwards. This leads her to reject Ross'

1. Cf. Bach (1962), Bierwisch (1963:30-36), Esau (1973a). There is (perhaps) supporting evidence from studies of child language acquisition for the psychological validity of SOV as the unmarked and thus underlying order of elements in the German clause (Roeper, 1973). Roeper further claims (1973:190) that the 'SOV-hypothesis' 'agrees with the intuition of native speakers', but does not adduce any evidence for this claim.

arguments, since the claim upon which they are based, namely that there are two types of gapping, is invalid. This refutation has strengthened the case for adopting SOV as the underlying word-order, and indeed most researchers working on the transformational grammar of German within an ordered-base framework assume this order without argument (cf. Evers, 1975:8).

An exception is von der Mülbe (1973:274), who, having rehearsed four syntactic arguments for SOV, opts for SVO on the sole basis of certain psychological tests which showed that subjects preferred the SVO-representation of such complex sentences as (306):

- (306) Karl sagte, Maria wüsste, dass Paul befohlen hat,  
sie solle Wilhelm raten, Spiegeleier zu essen.

to an SOV-representation, which involved four occurrences of centre-embedding. Von der Mülbe concludes (1973:274):

Es erscheint unwahrscheinlich, dass Oberflächenstrukturen, die einen hohen Grad an Akzeptabilität besitzen, aus Tiefenstrukturen abgeleitet werden, deren Strukturtyp einen sehr niedrigen Akzeptabilitätsgrad erreichen.

This argument rests, however, on four very questionable, and partly interrelated assumptions: (a) that deep structures have 'psychological reality', in the sense that they may be taken to reflect actual psychical phenomena; (b) that one argument from experimental psychology outweighs four syntactic arguments for the well-formedness of (syntactic) deep structure; (c) that degrees of acceptability may be



ascribed to structures as well as to sentences; (d) that it is possible to have intuitions about deep structures and to gauge their putative 'acceptability' on the basis of these intuitions. Without evidence for these (in the present state of knowledge and theory, highly implausible) assumptions, von der Mülbe's case for SVO remains totally unconvincing.

All the arguments considered above have been characterized by being strictly synchronic. I believe, however, that consideration of diachrony will help to clarify the situation and to explain why grammarians who have found it necessary to posit an underlying word-order have found it difficult to determine that of contemporary German. There are strong indications that the unmarked order of syntactic elements in Primitive Germanic was SOV (cf. Lehmann, 1972), and that the daughter-languages have tended to develop towards a more or less consistent SVO structure, passing through an intermediate stage which requires the verb to be the second major constituent of every main clause (even if the verb thereby comes to precede the subject, as when the main clause is introduced by an adverbial). This is reflected in the transformational analysis of earlier stages of contemporary Germanic languages: Wagner (1969) treats Old English as underlyingly SOV, whereas most analyses of Modern English opt for SVO.<sup>1</sup> If the trend sketched out above is indeed real, then English may be said to have reached the 'target', Icelandic and Faroese, which have lost SOV but retain the verb-second requirement, are less advanced, and German and Dutch, which have the verb-second requirement and retain SOV in

1. *Pace* McCawley (1970), who finds that underlying VSO simplifies the statement of several transformations in English.

subordinate clauses, are the least advanced.

There are indications in contemporary German, however, that there is a certain trend away from final position for the verb in subordinate clauses. As Lockwood points out (1968:261-262), 'the present rule which lays down absolutely that the verb must come last in the subordinate clause is a creation of the modern literary language'. It is thus not surprising that violations of this rule are most frequently encountered in the spoken language, less trammelled by rigid convention. The trend away from 'V-finality' is reflected in the increasing acceptability of such sentences as (307):

- (307) Es ist schwer zu denken, dass fremde Leute wohnen  
in dem alten Herrenhaus. (Rilke)

Eggeling (1961:403) taxes (307) with 'taking an inexcusable liberty with the spirit of the German prose language'; the descriptive linguist must however give recognition to the increasing prevalence of this construction. Evers (1975:21-22) posits an optional transformation PP-Shift for both German and Dutch which he claims is involved in the derivation of such sentences as (307). Should the shifting of PPs to clause-final position in subordinate clauses become the norm in German, as it has in Dutch, this would represent a step towards SVO in both main and subordinate clauses. At present, however, it appears wisest to posit the order SOV for the underlying structure, not only in light of the numerous arguments that have been put forward in its favour and the weaknesses inherent in the counter-proposals that have been made, but also because it allows the grammarian to chart any trend away from

V-finality in terms of exceptions to a homogeneous pattern.

Not only is there a strong case for analysing German as underlyingly SOV, but it has also been suggested, more surprisingly perhaps, by Bierwisch (1963:59-61) and Esau (1973a) that German prepositions are postpositions in underlying structure. It is certainly true that, in German, all four possible orders of preposition and NP occur: (a) some prepositions may either follow or precede the NP (*gemäss, nach, wegen, gegenüber, ...*); (b) some may only follow (*über* 'during', *ert lang, ...*); (c) some may only precede (*in, auf, aus, ...*); (d) some are discontinuous (*an NP vorbei, um NP willen, ...*). Thus there is no reason, considerations of statistical frequency apart, for assuming that prepositions (in the broad sense of Vennemann's 'adpositions', cf. 0.1.1.2 above) are necessarily prepositional (in the narrow sense) in underlying structure. Bierwisch (1963:60) argues that, when an inanimate noun governed by a preposition is pronominalized either to *es*, or, if deictic, to *dies* or *das*, the obligatory morphophonemic rules for creating *dafür, daneben, damit, demgemäss, deswegen, hieran, hiergegen, hiermit, hierzu*, etc., in all of which the prepositional morpheme occurs finally, are much more simply stated if the prepositions are assumed to follow the governed NP in the input to these rules. Bierwisch also observes that German case-inflexions are always suffixed and claims that the parallel function of case-inflexions and prepositions is best captured if both occur in the same position with relation to the NP in underlying structure; moreover, the rules handling the interaction between prepositions and case-affixes (the 'cases required' by the preposition) are more simply expressed if both



categories are juxtaposed in underlying structure. Esau (1973a:25) finds that:

... the use of postpositions appears to be increasing in structures which are sometimes mistakenly referred to as "prepositional brackets", instances where a preposition is copied as a postposition after the noun. These constructions are very common in directional and locative phrases [in many instances of which] the preposition can disappear ... Perhaps this indicates that the disappearance of prepositions where they have become copied as postpositions is an ongoing process in German.

As examples of such 'prepositional brackets', Esau gives the following:

- (308a) (auf) den Berg hinauf
- (308b) am Fluss entlang -- den Fluss entlang
- (308c) auf dem Baum oben
- (308d) ins Haus hinein
- (308e) im Haus drin
- etc.

Esau's suggestion that German is in the process of becoming a postpositional language deserves attention, not least because this claim has never been made, to my knowledge, for any Germanic language. The so-called 'prepositional bracket' is a construction which occurs very frequently in spoken standard German and which is indeed normal in certain dialects, notably those of Switzerland. A defining characteristic of the prepositional bracket is that the second element, be it an

adverb of place (*oben, unten, hinten, ...*) or a pro-adverb (*drin, hinein, drauf, heraus, ...*), is always semantically redundant, its function being to reinforce the meaning of the preposition which constitutes the first element of the bracket. Esau's example (308b) is therefore, according to this definition, not a prepositional bracket, since the second element is not redundant (*am Fluss* ≠ *am Fluss entlang*); rather *an ... entlang* should be analysed as a discontinuous preposition. *Entlang* with preceding accusative NP is certainly analysable as a postposition, although historical evidence suggests (Lockwood, 1968:183-184) that the postposition *entlang* is derived diachronically from a formally identical adverb preceded by an NP in the 'accusative of path'. The other type of (supposed) postposition which Esau takes to be indicative of an ongoing trend is that exemplified by (308a). However, given that the NP in such expressions can be transformationally moved away from the alleged postposition, either by fronting, as in (309) below, or by the intercalation of one or more adverbs, as in (310), neither of which is possible in the case of a prepositional phrase (cf. (311) and (312)) or a postpositional phrase (cf. (313) and (314)), there seems to be little reason for regarding *den Berg hinauf* or any other such syntagm as a PP:

- (309) Nicht diesen Berg ging er hinauf, sondern jenen.
- (310) Er ging den Berg langsam und müde hinauf.
- (311) <sup>+</sup>Nicht diesen Berg ging er auf, sondern jenen.
- (312) <sup>+</sup>Er ging auf langsam und müde den Berg.
- (313) <sup>+</sup>Nicht diese Strasse ging er entlang, sondern jene.
- (314) <sup>+</sup>Er ging die Strasse langsam und müde entlang.

Of Esau's remaining examples, suffice it to point out that the first element of these prepositional brackets cannot be omitted, to my knowledge, in any dialect of German. Thus I must conclude that Esau has failed to produce any evidence for his contention that German is turning into a postpositional language.

Vennemann (1973) has suggested, indeed, that the reverse trend is noticeable in contemporary German: those 'adpositions', to use his term again, which may either follow or precede the governed NP are increasingly tending, he claims, to precede. One example is *gegenüber*, which was originally discontinuous (*gegen ... über*), then postpositional, and today almost universally prepositional; *wegen*, originally a noun preceded by a genitive, then a postposition, similarly almost always occurs as a preposition in contemporary German.<sup>1</sup> Vennemann links this development with the 'principle of natural serialization', first proposed by Bartsch and Vennemann (1972:131), who classify syntactical categories as 'operators' and 'operands' according as the exponents of these categories have a predicative or non-predicative semantic function respectively and claim that 'the operator-operand relationship tends to be expressed by uni-directional serialization'. In other words, each language tends to impose one of the two possible linear orderings on every pair (Operator, Operand). From this claim, it is a natural step to the assertion that a change in the serialization of one operator-operand pair will induce a similar change in the ordering of

1. For further details of the historical development of these forms, see Lockwood (1968: 186-187 and 182-183 respectively).

all other pairs. If it is conceded that both verbs and prepositions are 'operators' (the predicative function of prepositions will be argued for below, 4.3.3), then the parallelism between the two trends observable in contemporary German, the one away from V-finality as a result of PP-Shift, the other away from postpositionality, may be explained in terms of 'natural serialization'. It is possible to go further and claim that if verbs and prepositions are both analysed as transitive predicates, the two tendencies discussed here reduce to one general tendency for transitive predicates to move from following to preceding their object-argument. Thus the analysis of German word-order is simplified by analysing both verbs and prepositions as belonging to the one category of predicates.

#### 4.3. Arguments from German semantics

##### 4.3.1. Universal Base Hypothesis

In 4.2, three arguments were presented to show how the description of the morphosyntactic structure of German is simplified (and thus enhanced) by analysing both verbs and prepositions as predicates. In this section, I shall consider whether this proposal is in line with the hypothesis that all natural languages are characterized by a universal base structure which is also a semantic representation of all the well-formed sentences in natural languages (the Universal Base Hypothesis). Although it has long been recognized that this hypothesis is non-falsifiable (cf. Peters and Ritchie, 1969) and therefore does not offer a sound basis for linguistic research, more constrained 'working hypotheses' inspired by the Universal Base Hypothesis have been used

by 'generative semanticists' with considerable reward. This is the implication of Bach's remark (1974:265) that 'no linguist would ever seriously propose a transformation for a natural language like the ones used by Peters and Ritchie for their proofs'. The following discussion will attach itself to the generative semantics 'tradition' in examining the relatively modest claim that a common underlying structure may be posited for a limited set of French and German sentences involving verbs of locomotion.

Consider the German sentences (315) to (317) and their translational equivalents in French (318) to (320):

- (315) Ich laufe aus dem Laden.
- (316) Ich schleiche aus dem Laden.
- (317) Ich schreite aus dem Laden.
- (318) Je quitte la boutique en courant.
- (319) Je quitte la boutique à la dérobée.
- (320) Je quitte la boutique d'un pas majestueux.

The common factor linking (315), (316), and (317) is that the semantic representation of each contains the proposition 'I move out of the shop'. What distinguishes the three sentences is that three different modes of locomotion are predicated of *ich*, namely running, creeping and striding respectively. The shared propositional content is expressed explicitly in French, as *Je quitte la boutique*, whereas the mode of locomotion is not incorporated into the main verb but is realized by an adverbial. Consideration of (318) to (320) helps elucidate the fact that *laufen*, *schleichen* and *schreiten* are semantically complex: such verbs predicate of their subject (a) that its referent is in motion and

(b) that it is moving in a particular fashion. There is therefore a strong case for treating such verbs as the lexicalization of two underlying predicates. Let us now consider what these underlying predicates might be.

The manner predicate may be represented as one of the set {*LAUF*, *SCHLEICH*, *SCHREIT*, ...} : the individual members of this set may well be susceptible of further analysis in terms of a finite number of semantic primes, but I shall not pursue that matter here. In German, the manner predicate is lexicalized directly in the main verb, whereas, in French, it is realized as a manner adverbial. The other predicate that appears to be needed signals 'pure motion',<sup>1</sup> movement through space irrespective of the manner in which the movement occurs (let it be represented as *BEWEG*). Thus the underlying proposition common to (315), (316), and (317) might be represented, informally, as (321):

(321) Ich *BEWEG* aus dem Laden.

It is however apparent that 'pure motion' is more economically represented if the hypothesized predicate *BEWEG* is omitted, since the notion of pure motion is adequately expressed by the unequivocally motional and manner-neutral element underlying *aus*.<sup>2</sup> The neutrality

1. Binnick (1968) classifies *go* and *come* as 'pure motive verbs' (though presumably with an added deictic component).

2. Similar considerations motivated Bach (1967:484) and Lyons (1968: 397-398) to treat *go* as a dummy verb inserted automatically before directional complements.



of the preposition with respect to mode of locomotion scarcely requires discussion; note, however, the relevance of this property of the preposition to the interpretation of such examples as (322):

- (322) Wir wollen jetzt in die Stadt! Fahren wir oder gehen wir?

The proposal is therefore to postulate a predicate of 'pure exit',<sup>1</sup> occurring in the base structures of both languages, and realized in French as the verb *quitter*, but in German as the preposition *aus*. From this it clearly follows that a large number of other predicates may be hypothesized: a predicate of 'pure entry', realized in French as *entrer* (+ PO introduced by *dans*) and in German as the preposition *in*, a predicate of 'pure juxtaposition' (French *s'approcher* + *de*, German *neben*), and many others. To these I shall give the name of 'prepositional predicates'.

#### 4.3.2. Becker and Arms

Becker and Arms (1969) seek to motivate the claim that prepositions are a type of predicate with a series of arguments based on observations of the syntactic and semantic properties of English prepositions and on a brief comparison of English and Bahasa Indonesia. I shall now consider their arguments with a view to discussing

1. It will be argued below (5.2.4) that this predicate, and other analogous 'prepositional predicates' are susceptible of further analysis in terms of a limited set of primes.

the function of the preposition (in German) in 4.3.3.

Becker and Arms offer two syntactic arguments: (a) that verbs and prepositions share the same properties with respect to transitivity (a point which I have discussed in 4.2.2 above); (b) that 'motional' prepositions (by which Becker and Arms mean complex-locative prepositions, i.e. those involved in predications which specify a location by indicating the path leading from the deictic point of reference to the location, as in *The farm lies over the hill*) resemble motional verbs in having deletable objects, whereas this is 'not normally' the case with locative prepositions. While I of course have no quarrel with the first of these arguments, I cannot accept the second, since, as shown in 1.3.1.2, it is indeed quite 'normal' for all types of preposition, locational or motional, to have an equivalent intransitive form (which may or may not be morphologically identical to the transitive form).

Becker and Arms' semantic arguments have been criticized -- I believe, justly -- by Allan (1974:1) on the grounds that they fail 'to make a clear distinction between the *function* of members of lexical class [sic] of verbs and their *content*' (emphasis Allan's). For example, Becker and Arms make great play of the observation that many verbs of motion may be paraphrased as *go* + preposition (e.g. *cross* = *go across*) and claim that this constitutes evidence that *across* functions as a verb; Allan (1974:2) points out, however, that this observation in itself 'proves nothing about the grammatical function of the preposition *across*' and also that the fact that *across*



may be (historically) deverbal is not evidence for verbal function, just as the deverbal status of *revolution* and *impression* does not imply that nouns function as verbs. Allan also rejects Becker and Arms' claim that prepositions frequently appear as verbs in such instances as *Out, out, damned spot!*, *He upped his rating*, *He downed the ball*) on the grounds that other categories which one would not wish to assimilate to verbs, such as nouns, can also take verbal inflexions (Allan instances *boycott*, *rocket*, and *beard*). Another weakness in this argument is pointed out by Bauer (1975:345), who observes that some prepositions may also take nominal inflexions (as in *the ups and downs of life*); this observation serves as the basis for a further *reductio ad absurdum* of Becker and Arms' analysis. Allan is surely right to conclude that such imperatives as *In!*, *Out!*, and *Off!* are fossilized forms, since corresponding finite forms do not occur (<sup>+</sup>*she ins*, <sup>+</sup>*he outed*) and other prepositions cannot serve as imperatives (<sup>+</sup>*For!*, <sup>+</sup>*At!*, etc.). In conclusion, one may state that Becker and Arms rely excessively on similarity of form (i.e. morphological similarities between verbs and prepositions) and on similarity of meaning as criteria for conflating the two categories, but do not put enough emphasis on parallelism of function. In the remaining paragraphs of this section, I shall examine the hypothesis that prepositions have a predicative *function*, and should for *that* reason be analysed, like verbs, as predicates.

#### 4.3.3. Predicative function of prepositions

The semantic function of locative prepositions being to indicate

the relative position of entities in space, i.e. to identify the locative relation holding between two (or more) objects, it is possible to represent the preposition as a many-place (polyadic) predicate and the entities as the arguments of that predicate. Thus the sentence (323):

(323) In dem Korb sind Äpfel.

may be represented, using the familiar predicate calculus and ignoring tense, definiteness, number, and any other such categories, as (324):

(324) *IN*(Apfel, Korb)

Similarly, such a sentence as (325):

(325) Der Korb enthält Äpfel.

is naturally represented as (326):

(326) *ENTHALT*(Korb, Apfel)

Both *IN* and *ENTHALT*, being necessarily two-place (dyadic), are termed 'relational predicates' and the predications in which they occur are called 'relations'. It remains to be seen whether this intuitively plausible analysis of prepositions, or, more precisely, prepositional predicates in the sense of 4.3.1 above, as relational predicates offers interesting insights.

Relational predicates are classifiable according to their symmetry, transitivity, and reflexivity. These may be defined, for dyadic predicates, as follows, where *R* represents the relational

predicate and  $x, y$  (and  $z$ ) are its arguments.  $R$  is said to be symmetric if (327), nonsymmetric if (328), and asymmetric if (329):

$$(327) \quad (\forall x)(\forall y)(R(x,y) \supset R(y,x))$$

$$(328) \quad \sim (\forall x)(\forall y)(R(x,y) \supset R(y,x))$$

$$(329) \quad (\forall x)(\forall y)(R(x,y) \supset \sim R(y,x))$$

Thus the predicate *HEIRAT* (corresponding to *heiraten*) is symmetric, *LIEB* (*lieben*) is nonsymmetric, and *ZEUG* (*zeugen*) is asymmetric.  $R$  is said to be transitive if (330), nontransitive if (331), and intransitive if (332):

$$(330) \quad (\forall x)(\forall y)(\forall z)(R(x,y) \ \& \ R(y,z) \supset R(x,z))$$

$$(331) \quad \sim (\forall x)(\forall y)(\forall z)(R(x,y) \ \& \ R(y,z) \supset R(x,z))$$

$$(332) \quad (\forall x)(\forall y)(\forall z)(R(x,y) \ \& \ R(y,z) \supset \sim R(x,z))$$

Thus the predicate *ENTHALT* is transitive, *LIEB* is nontransitive, and *ZEUG* is intransitive.  $R$  is said to be reflexive if (333), nonreflexive if (334), and irreflexive if (335):

$$(333) \quad (\forall x)(\forall y)(R(x,y) \vee R(y,x) \supset R(x,x))$$

$$(334) \quad \sim (\forall x)(\forall y)(R(x,y) \vee R(y,x) \supset R(x,x))$$

$$(335) \quad (\forall x)(\forall y)(R(x,y) \vee R(y,x) \supset \sim R(x,x))$$

Thus the predicate *GLEICH* is reflexive, *SEH* is nonreflexive, and *ZEUG* is irreflexive.

Examination of the set of German locative prepositions shows that they may similarly be grouped according to the type of relation they express. The parameter of reflexivity turns out to be non-discriminating

in that all locative prepositions are irreflexive, which is hardly surprising, given that it would be absurd to state the location of an object in terms of its own location. The other two parameters do however allow the set to be grouped into a number of subsets. Consider (336), which lists the most frequently occurring<sup>1</sup> German locative (non-motional) prepositions:

- (336) an, auf, ausserhalb, bei, diesseits, gegenüber,  
hinter, in, innerhalb, jenseits, neben, oberhalb,  
über, um, unter, unterhalb, vor, zwischen

Let us invoke the notion of 'prepositional predicate' introduced in 4.3.1 above: each prepositional predicate represents in abbreviated form the complex of semantic primes that may be hypothesized to underlie each preposition. The prepositional predicates underlying the prepositions in (336) -- with the exception of *ZWISCHEN*, which, as will emerge in 5.2.3 below, requires analysis as a triadic predicate -- may (provisionally) all be analysed as dyadic, and may be divided into five subsets according to the criteria of symmetry and transitivity. Consider Table 2 overleaf.

1. According to the rank list in Meier (1964).

Table 2

Relation-type	Prepositional predicates
Symmetric intransitive	<i>GEGENUBER</i>
Asymmetric transitive	<i>DIESSEITS, HINTER, IN, INNERHALB, JENSEITS, OBERHALB, UBER, UM, UNTER, UNTERHALB, VOR</i>
Asymmetric intransitive	
Asymmetric nontransitive	
Nonsymmetric nontransitive	<i>AN, AUF</i>
	<i>AUSSERHALB</i>
	<i>BEI, NEBEN</i>

It emerges from Table 2 that the majority of German prepositional predicates of location are asymmetric, transitive (and irreflexive). As such, they are what Leech (1974) terms 'ordering relations', which he defines as placing 'the arguments in an irreversible order in respect to the dimension of meaning concerned' (1974:113-114). It might be assumed that this property would be characteristic of all prepositional predicates of location, but, as is clear from Table 2, some may not be classified as ordering relations; it is these I shall consider in the following section, returning in 4.3.3.2 to those predicates which may be classified as ordering relations.

#### 4.3.3.1. Non-ordering relations

As will be further discussed in 5.2.4 below, *AN* and *AUF* are the only prepositional predicates necessarily to involve a meaning-

component of contact: the former involves contiguity of the entity or entities represented by the first argument (henceforth the locandum) with a side-surface of the entity or entities represented by the second argument (henceforth the location object), whereas the latter involves contiguity of the locandum with a top-surface of the location object. This meaning-component rules out the possibility of transitivity, a necessary property of ordering relations. Thus, from (337) and (338):

(337) Ich sitze auf dem Stuhl.

(338) Der Stuhl steht auf dem Boden.

it cannot be validly concluded that (339) is the case:

(339) Ich sitze/stehe auf dem Boden.

There do occur apparent exceptions to this, which might lead one to suppose that *AN* and *AUF* are nontransitive rather than intransitive. It can happen that a speaker will choose, for pragmatic purposes, to ignore the 'intermediary object' (the entity represented by *y* in (330) to (332) above). Thus, given a situation in which (340) and (341) are true:

(340) Die Vase steht auf dem Buch.

(341) Das Buch liegt auf dem Fernseher.

it would be feasible to answer a question as to the whereabouts of the vase with (342):

(342) Die Vase steht auf dem Fernseher.

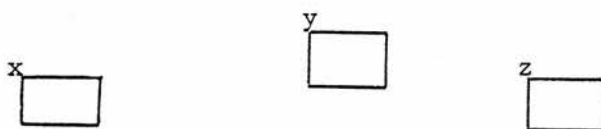
This apparently transitive use of the relation *AUF* is however possible



only when the intermediary object, here *das Buch*, is perceptually non-salient, so that the most 'conversationally helpful', though not strictly accurate answer is (342) rather than (340). Such pragmatic considerations often make it difficult to determine the logical properties of predicates: it can however be confidently asserted that *AN* and *AUF* are not ordering relations and that they are the only members of the set of prepositional predicates that are necessarily<sup>1</sup> asymmetric intransitive.

*AUSSERHALB* appears at first sight to be a transitive predicate. Consider objects x, y and z in the following diagram:

Diagram 1



It is clearly the case that, in Diagram 1, (343) holds, satisfying the definition of transitivity (cf. (330) above):

$$(343) \quad AUSSERHALB(x,y) \ \& \ AUSSERHALB(y,z) \ \& \ AUSSERHALB(x,z)$$

Consider, however, Diagram 2:

Diagram 2



In Diagram 2, (344) holds:

$$(344) \quad AUSSERHALB(x,y) \ \& \ AUSSERHALB(y,z) \ \& \ \sim AUSSERHALB(x,z)$$

1. It will emerge below (5.2.4) that certain occurrences of *UNTER* are also classifiable as asymmetric intransitive.

The conclusion must therefore be drawn that *AUSSERHALB* is nontransitive, since its transitivity value depends on a factual property of individual situations, namely whether or not it is further the case that *IN(x,z)*.

*BEI* and *NEBEN* are similarly to be classed as nontransitive, since proximity, the relation which they predicate of two objects, with differences to be discussed in 5.2.4 below, cannot be identified objectively. If two objects X and Y are near each other and one of the objects X is also near a third object Z, it is a matter of factual circumstance whether or not a speaker will judge Y to be near Z. *BEI* and *NEBEN* are furthermore nonsymmetric, since, in general, the locandum is a mobile, impermanent entity, whereas the location object is typically stable and (relatively) permanent. In other words, these predicates tend to relate the position of a mobile entity to that of a stable entity (for further discussion with relation to *bei*, see Dreike, 1973:108-110). As a result, the arguments in some predications may be reversed (switching the topic-comment relation):

(345) Johann sitzt neben/bei Marie.

(346) Marie sitzt neben/bei Johann.

but in others they may not:

(347) Johann steht neben/bei dem Rathaus.

(348) <sup>+</sup>Das Rathaus steht neben/bei Johann.

*GEGENUBER* is the only prepositional predicate which I have classified as symmetric; I do so because it typically relates two



equally stable entities. Thus, for example, (349) and (350) may be used to refer to the same situation:

(349) Das Rathaus steht gegenüber dem Münster.

(350) Das Münster steht gegenüber dem Rathaus.

The order of arguments is dictated by considerations of topic and comment: the locandum is typically given material, and the location object new.

#### 4.3.3.2. Ordering relations

The predicates discussed in 4.3.3.1 are characterized by a heterogeneous set of logical properties; the remaining predicates in Table 2 are all ordering relations. It is interesting that these remaining predicates are also those which are most readily classifiable in terms of 'converse relations'. A converse relation is said to hold of a pair of relational predicates (R,S) for which it is the case that (351):

(351)  $(\forall x)(\forall y)(R(x,y) \supset S(y,x))$

The predicates underlying the verbs *gehören* and *besitzen*, *vorausgehen* and *folgen*, *unterordnen* and *überordnen* are all related in this way. The following converse relations may be identified among the set of prepositional predicates:

(352) DIESSEITS -- JENSEITS  
OBERHALB -- UNTERHALB  
UBER -- UNTER  
VOR -- HINTER

It is a moot point whether or not *IN* has a converse counterpart among the prepositional predicates. Hecht-Kroes (1967, 1970) assumes (in a rather different framework, that of machine-translation) that there is a converse relation between the prepositions *in* and *um*. This is perfectly valid for his representation of prepositional meanings in terms of geometrical axes, points, circles, and vectors, but does not concord with the actual use of the prepositions *in* and *um*. There is, for example, no (354) corresponding to (353):

(353) Die Familie sitzt um den Tisch.

(354) <sup>+</sup>Der Tisch steht in der Familie.

and (356), an unusual sentence, cannot happily be equated with (355):

(355) Ich bin im Esszimmer.

(356) ?Das Esszimmer ist um mich.

Similarly, *AUSSERHALB*, which might at first sight appear suitable, cannot be the converse of *IN*, except in a strictly geometrical context:

(357) <sup>+</sup>Das Esszimmer ist ausserhalb meiner.

(358) Sie waren letzten Sommer in Deutschland.

(359) <sup>+</sup>Letzten Sommer war Deutschland ausserhalb ihrer.

Indeed, the only real candidate for the converse of *IN* is a predicate which underlies a verb rather than a preposition, *ENTHALT* (corresponding to *enthalten*). This applies, however, only if the first argument of *ENTHALT* (and the second of *IN*) represents an entity which functions as a container:

- (360) Die Äpfel liegen im Korb.
- (361) Der Korb enthält die Äpfel.
- (362) Wir befinden uns in Schottland.
- (363) <sup>+</sup>Schottland enthält uns.

In other cases, *UMGEB* (*umgeben*) or *EINSCHLIESS* (*einschliessen*) might seem more appropriate converses, depending upon the meaning of the arguments associated with *IN*: the former suggests itself where the location object of *IN* surrounds the locandum on the horizontal plane, as in (364) and (365):

- (364) Wir waren in den Bergen.
- (365) Die Berge umgaben uns.

whereas the latter is more appropriate under similar circumstances but where escape from encirclement is difficult or impossible, as in (366) and (367):

- (366) Wir waren im Nebel.
- (367) Der Nebel schloss uns ein.

Thus *IN* has no converse counterpart among the prepositional predicates listed in Table 2 above, but rather appears to enter into a converse relation with a number of predicates underlying surface verbs, or at least with one of the predicates making up the complex predicates lexicalized as those surface verbs. It thus seems reasonable to postulate a predicate *IN'*, the converse of *IN*, which has no prepositional realization, which is however part of the underlying representation of such verbs as *enthalten*, *umgeben*, *einschliessen*, etc.

*INNERHALB* and *UM* similarly lack converse counterparts among the prepositional predicates: as with *IN*, however, it is possible to posit converse predicates representable as *INNERHALB'* and *UM'*.

A simpler solution, which avoids the needless multiplication of predicates, is to reverse the order of the arguments, i.e. to represent *IN'*(x,y) as *IN*(y,x); and similarly for *INNERHALB'* and *UM'*. This proposal has the added advantage of also allowing a reduction in the number of prepositional predicates that will need to be posited: each of the pairs of converses set out in (352) above may be represented as one predicate only. Thus, for example, the pair *VOR* -- *HINTER* may be replaced by one predicate *VOR*.<sup>1</sup> If *VOR*(x,y) is realized as *X ist vor Y*, my proposal is that there is an alternative (synonymous) realization *Y ist hinter X*; and *VOR*(y,x) will be realized as either *Y ist vor X* or *X ist hinter Y*. Similarly, the pair *DIESSEITS* -- *JENSEITS* will be replaced by *DIESSEITS*, *UBER* -- *UNTER* by *UBER*, and *OBERHALB* -- *UNTERHALB* by *OBERHALB*. The factors influencing the choice of realization appear to be bound up, *inter alia*, with considerations of topic and comment: if the first argument of a *VOR*-predication is a comment ('new'), then the unmarked realization is *hinter*; if it is a topic ('given'), the unmarked choice is *vor*. For example, if a

1. The choice of *VOR* rather than *HINTER* is motivated by the fact, which will emerge below, that *vor* has a slightly wider distribution than *hinter*. Considerations of markedness dictate opting for that ordering of arguments in the semantic representation which has the widest distribution in surface structure.

speaker wishes to communicate the proposition *VOR*(Johann, Haus), the realization will be influenced by considerations of givenness. In response to (368), (369) is highly preferable to (370), since *Johann*, the first argument, is given:

- (368) Wo ist Johann?
- (369) Er ist vor dem Haus.
- (370) Das Haus ist hinter ihm.

But in response to (371), (372) is much more appropriate than (373):

- (371) Wo ist das Haus?
- (372) Das Haus ist hinter Johann.
- (373) Johann ist vor dem Haus.

There do appear to be further considerations, however, which may even override the influence of topic-comment relations. The first involves the relative size of the entities represented by the arguments: in general terms, if the larger entity is behind the smaller, the unmarked realization is *vor*, and, if the opposite situation obtains, the unmarked realization is *hinter*. Connected with this is the fact that *hinter* often implies invisibility or concealment of the locandum from the point of view of the observer. Thus, given the propositions *VOR*(Akazie, Hochhaus) and *VOR* (Hochhaus, Akazie), an acacia being smaller than a high-rise building, and therefore capable of being concealed behind it, (374) is a more natural realization of the first proposition than (375), and (376) a more natural realization of the second than (377):

- (374) Vor dem Hochhaus steht eine Akazie.  
(375) ?Das Hochhaus steht hinter einer Akazie.  
(376) Hinter dem Hochhaus steht eine Akazie.  
(377) ?Das Hochhaus steht vor einer Akazie.

The relative acceptability of these sentences is also predicted by the topic-comment principle discussed above; but this principle is overruled by considerations of size in such a sentence as (378):

- (378) Das kleine Haus steht hinter einem grossen Baum.

A further consideration influencing the choice of *vor* or *hinter* derives from the fact that the human body, being asymmetrical, is characterized by an intrinsic orientation on the horizontal plane<sup>1</sup>: in other words, all human beings have a universally distinguishable back and front. All animals, except for amorphous organisms, and many objects with which man interacts have been assigned a conventional front-back orientation in accordance with a limited number of principles, which have been identified by Clark (1973) and Jessen (1975).<sup>2</sup> Jessen considers the front-back orientation of all bodies to be governed by three principles: (a) anthropocentric or egocentric extension, whereby the non-human body is assigned orientation by analogy with the human body (animals, articles of clothing, telescopes, cameras, loudspeakers, etc.); (b) confrontation, whereby the front of the non-human body is

1. The human body also has intrinsic vertical orientation (*up -- down, head -- foot*); this does not, however, appear to be relevant for the lexicalization of *ÜBER* and *OBERHALB*.

2. For further discussion, see also Fillmore, 1975.



that side which man typically encounters (television sets, typewriters, desks, etc.); (c) locomotion, whereby the front of the non-human body is taken to be that which leads when the body is in motion (vehicles, bullets, etc.). I accept Jessen's classification, but would go further and propose that anthropocentric extension is the fundamental principle, subsuming the other two: the principle of confrontation is not restricted to man's interaction with objects, but is of course also characteristic of man's interaction with man, in as much as it is typical for human beings, when interacting, to have the side of their bodies independently recognizable as the front (position of major sensory organs, etc.) facing each other; similarly, the principle of locomotion is also valid for man, who, typically, moves in the direction in which the independently identifiable front of his body faces. I would therefore suggest that all uses of *vor* and *hinter* involving the intrinsic orientation of objects may be interpreted as the result of anthropocentric extension.

Now, if a human being, or an object assigned orientation by anthropocentric extension, is involved as the location object of a *VOR*-predication, the favoured interpretation of *vor* and *hinter* will tend to be 'in a space adjacent to the front of' and 'in a space adjacent to the back of' respectively. Alongside this type of interpretation, there may be a second interpretation based on the fundamental meaning of *VOR*, and which is the only possible meaning when anthropocentric extension is absent. Such sentences as (379):

(379) Er stand vor dem Wagen.

are consequently ambiguous: (379) may be glossed either 'He stood in the area adjacent to the front of the car' or 'He stood between the observer (not necessarily identical with the speaker) and the car'. Since sentences involving *hinter* are characterized by the same kind of ambiguity under the same circumstances, *vor* and *hinter* realize converse relations in both their fundamental meaning and the meaning derived from anthropocentric extension. Note, however, that there is a further sense of *vor*, discussed by Dreike (1974:5), which finds no parallel in the interpretation of sentences with *hinter*; an example would be (379) understood as 'He stood facing the car'. Jessen (1975: 109) has a neat explanation for this phenomenon, claiming that this sense of *vor* indicates '... a situation where an object is given an extrinsic front under the observation of some person (the speaker, usually) who then locates himself with respect to that front', and that *hinter* cannot have this sense (i.e. the sense 'with one's back towards') because it is impossible to induce orientation in an object without facing that object. This explanation, based on an elucidation of the situations in which *vor* may be used as an equivalent of English *facing*, saves the hypothesis that *vor* and *hinter* realize converse relations in semantic structure.

Anthropocentric extension appears not to be relevant for the lexicalization of predicates relating to the vertical dimension: this is shown by the fact that *über* and *oberhalb* can never mean 'in the space adjacent to the top of (an entity)' except when the top is actually positioned higher than any other part of that entity. Thus, an object lying next to the top of, for example, a discarded television



set which is resting on its side, so that the anthropocentrically assigned top is not actually the top surface, cannot be referred to as being *über dem Fernseher* or *oberhalb des Fernsehers*; similarly for *un ter* and *unterhalb*.

Of the other predicates listed in Table 2, *GEGENUBER*, being symmetric, can have no other converse but itself; this is also true of those (pragmatically) symmetric instances of non-symmetric *NEBEN* and *BEI* -- their asymmetric instances have no lexicalized converses. It remains to point out that *AN* has no converse among the prepositional predicates; indeed, I have not been able to identify any surface form lexicalizing *AN'*. It is worth noting that the properties of *GEGENUBER* and *AN* are not idiosyncratic properties of prepositional predicates alone: the predicates underlying the verbs *ähneln*, *heiraten*, etc. have no converses but themselves, and the predicates underlying *lieben*, *sehen*, etc. have no lexicalized converses (except of course for the passive voice -- *geliebt werden*, *gesehen werden*, etc.).

The major conclusion I should wish to draw from the above discussion is that is not only possible to analyse prepositions as lexicalizing underlying predicates, but that it is indeed advantageous to do so, since such an analysis reveals several interesting facts about the structure of the system of (locative) prepositions. A further observation is that verbs and prepositions may be characterized by invoking the same set of logical properties (symmetricality, transitivity, reflexivity, converseness); the type of analysis being offered here provides a framework in which this parallelism emerges

particularly clearly.

#### 4.3.3.3. Historical precedents

The notion that prepositions realize relational predicates, although it has not generally been incorporated into contemporary grammatical theory and description, has a respectable pedigree in the history of linguistic investigation. Michael (1970:454) writes:

The most important, and the most obvious, fact about the preposition would seem to be that it expresses a relation. This fact is recognized in the tradition, principally by the speculative grammarians, but is given no prominence. The function of the preposition was traditionally 'to be set before' another word; the grammarian's eye was fastened not on the preposition itself but on the word it governed.

It would perhaps not be unfair to ascribe a similar tendency to disregard the semantic function of the preposition to the contemporary linguistic work described in Chapter III above.

The Grammaire générale et raisonnée of Port-Royal (Arnauld and Lancelot, 1660) was probably the first influential treatise to enunciate the principle that prepositions express 'rapports'. This idea gradually made ground outside France: Michael (1970:456) reports that only a quarter of the English grammars written before 1740 refer, when defining the preposition, to the expression of relation, whereas almost

three-quarters of those written between 1740 and 1800 contain some reference to this property. Tooke (1786) accepted the 'relational approach', and indeed went further, attempting to explain synchrony through diachrony: to him, prepositions were either 'corrupted' nouns or derived from the imperative form of verbs, and should therefore be analysed as nouns or verbs according to their etymology. *With*, for example, he takes to come from the imperative of Gothic *wīdan* (which is attested in the sense 'to join' with perfectivizing prefix *ga-*) so that *A house with a roof* is analysed as expressing the idea of a house plus an injunction to join (or add) the idea of a roof to that of the house. One of Tooke's more far-fetched proposals for the derivation of prepositions from nouns is for *under*, which he takes to be a 'corruption' of *on neder*, where *neder* is a noun borrowed from the Arabic *radir* 'the lowest point' (1786:I,407).

John Fearn's Anti-Tooke (1824/1827) takes issue, as the title suggests, with Tooke's general philosophical and linguistic outlook; it also contains discussion of Tooke's more detailed proposals. Without totally discarding Tooke's etymological approach to the analysis of prepositions, Fearn re-invokes the Port-Royal view of prepositions as primarily expressing relations.<sup>1</sup> Fearn renames prepositions 'minor verbs' -- 'minor', because the relation they express is subordinate to the 'major' proposition expressed by the main verb and its arguments. Thus, *He comes to London* is analysed by Fearn as having two verbs, one

1. For contemporary assessments of Fearn's work, see Asbach-Schnitker (1973) and Brekle (1974).

the 'major verb' *come* and the other the 'minor verb' *to*, which Fearn sees as an equivalent to the 'major verb' *finish*. Fearn makes much of the 'Principle of Relation', according to which all verbs, major or minor, are (in modern terms) polyadic predicates. Thus, the verb *sleep*, as in *I sleep*, although apparently monadic, must, according to Fearn, be analysed as (minimally) dyadic, since there is an 'understood' temporal or locational complement.<sup>1</sup>

It is interesting that a similar view is expressed, in more modern times, by Russell (1903, 1912) and by Russell and Whitehead (1910). Analysing (380):

(380) Socrates is human.

Russell (1903:49) concedes that *is* cannot, in such a proposition, express a relation in the ordinary sense, but states that:

... a relation between Socrates and humanity is certainly *implied*, and it is very difficult to conceive the proposition as expressing no relation at all. We may perhaps say that it is a relation, although it is distinguished from other relations in that it does not permit itself to be regarded as an assertion concerning either of its terms indifferently, but only as an assertion concerning the referent. (Emphasis Russell's)

1. The fact that Fearn's analysis implies an underlying 'deep' or 'logical' structure from which elements may be deleted is discussed, with relation to modern theories, by Asbach-Schnitker (1973).

Russell (1912:147-148) claims further that the favour enjoyed by the subject-predicate dichotomy among philosophers and linguists stems from neglect of relational predicates:

Speaking generally, adjectives and common nouns express qualities or properties of single things, whereas *prepositions and verbs* [my emphasis, JLM] tend to express relations between two or more things. Thus the neglect of prepositions and verbs led to the belief that every proposition can be regarded as attributing a property to a single thing, rather than as expressing a relation between two or more things.

Russell goes on to argue that relations are more basic 'universals' than qualities, since qualities are ultimately definable in terms of resemblance, and resemblance is a universal relation (for a rigorous formulation of this argument, see Russell and Whitehead, 1910:243-244).

The claim that qualities are ultimately relational is of considerable interest within the context of contemporary linguistic work on the nature of underlying structures. The claim is that  $P(\underline{a})$  is equivalent to  $\underline{a} \in \Pi$ , where  $\Pi$  is the set of entities characterized by the property  $P$ , i.e. bearing a resemblance to each other by virtue of that common property, and also that  $\underline{a} \in \Pi$  may be represented as a relation:

$$(381) \quad IN(\underline{a}, \Pi)$$

It is a matter of some current speculation whether (381) represents,



in outline, the underlying form of sentences like (380). Anderson (1971:207) suggests that a formula equivalent to (381), involving a locational predication, may well be the correct representation for predications of non-inherent qualities, since in many languages the surface realization of such predications contains an overt prepositional construction and/or a locative copula. It may also be the case that predications of inherent (essential) qualities are best represented by a locational formula of a similar type, since, in several languages, including Basque, Brazilian Portuguese -- and, to an extent, Irish Gaelic and Dravidian languages -- predications of inherent qualities also have an overtly locative form.<sup>1</sup> Thus, there does exist some evidence, at present still far from conclusive, that Russell's claim may have some linguistic justification. Indeed, if we also adopt Jessen's (1975) analysis of processes ('changes of state' such as in *John departed* or *John died*) as involving a directional predication (moving from 'existence at X' to 'existence at Y' or else 'non-existence'), Fearn's 'Principle of Relation' is given new life in terms of current linguistic theory. It may be reformulated as the hypothesis that all predications, whether overtly polyadic or not, are ultimately to be analysed as relations. If sustenance can be found for this hypothesis, then prepositions will be seen to resemble verbs not only in that both can be analysed as predicates, but also in that both can be analysed as (at the deepest level) *relational* predicates.

1. This (hitherto unpublished) claim was made by Anderson in the course of a seminar on localism held in the Dept. of Linguistics, University of Edinburgh (1975-1976).

#### 4.3.4. Aspectual properties of prepositions

Bennett (1975:91) suggests that *towards* 'has an aspectual meaning of incompleteness' in that 'it indicates that the goal in question is not actually reached' and notices, in this connexion, the frequent co-occurrence of this preposition and the progressive aspect.<sup>1</sup> If predicates realized as verbs may be classified according to their inherent aspectual properties, it is reasonable to expect that those predicates which are assumed to underlie prepositions may be similarly classified. If this proves not only possible but linguistically revealing, it will constitute further justification for analysing prepositions as predicates.

It is interesting to note that, in Mandarin Chinese, several prepositions,<sup>2</sup> some -- but admittedly not all -- of which have a clearly defined meaning-component of incompleteness, may optionally take the same suffixed progressive-marker (*-zhe*) as is found marking verbs

1. There are a number of adverbials in English all characterized by the suffix *-wards*, and diachronically related to *towards* (*outwards*, *inwards*, *homewards*, *backwards*, *forwards*, *downwards*, *upwards*, *northwards*, ... ) to which Bennett's comments also apply.

2. That such forms are indeed prepositions, and not verbs or 'co-verbs', at least in surface structure, has been convincingly demonstrated by Li and Thompson (1974b).



in the progressive aspect; since omission has no semantic effect, it is a redundant specification of progressiveness. The following prepositions have this characteristic:

- (382)
- |       |                   |
|-------|-------------------|
| chǒng | 'facing'          |
| chǎo  | 'facing'          |
| xiàng | 'facing'          |
| dūi   | 'towards'         |
| wàng  | 'towards'         |
| àn    | 'according to'    |
| píng  | 'according to'    |
| yán   | 'along'           |
| shùn  | 'along'           |
| nǐ    | 'against'         |
| wèi   | 'for the sake of' |
| āi    | 'adjacent to'     |

These Chinese data (drawn from Li and Thompson, 1974b) provide further evidence that prepositions can manifest aspectual properties and, in as much as the morphological device employed is also used for verbal aspect, strengthen the case for drawing parallels between the categories 'verb' and 'preposition'.

#### 4.3.4.1. Aspectual properties of German prepositions

In German, there are nine prepositions after which the governed NP may appear in either the accusative or the dative case-form:

- (383) an, auf, hinter, in, neben, über, unter, vor, zwischen

It is normally assumed that the accusative--dative distinction is directly correlatable with the semantic distinction between motion (directionality, change of state) and location respectively:

Die Präpositionen mit Dativ und Akkusativ gebrauchen den Dativ auf die Frage *wo?* und den Akkusativ auf die Frage *wohin?* Dieser Unterschied ist im allgemeinen klar und bereitet keine Schwierigkeiten (Schmitz, 1964:50).

This assumption is however not fully justified. Whereas the occurrence of the dative case-form in (384) and of the accusative case-form in (385) is predicted by Schmitz' generalization:

(384) Cherbourg liegt an dem Kanal.

(385) Wir fliegen über den Kanal hinüber.

one would not expect the accusative to be appropriate in (386), in which a location is predicated of *wir*:

(386) Jetzt sind wir über den Kanal hinüber.

which may be glossed as 'Now we're across (sc. on the other side of) the Channel' and which could occur in response to a *wo*-question, but not to a *wohin*-question.

I believe that an explanation for this apparent inconsistency is possible in terms of an application of Vendler's (1967) four-way classification of verb-types to the analysis of German prepositions. The four categories distinguished by Vendler are: (a) activities (e.g. *running*; *pushing a cart*), (b) accomplishments (e.g. *running a mile*;

*writing a letter*), (c) achievements (e.g. *finding something; recognizing someone*), (d) states (e.g. *loving someone; owning a house*). Vendler further suggests various tests for determining how verbs<sup>1</sup> are to be classified. These may be summarized in the form of five readily applicable criteria: (i) activities and accomplishments, but not achievements and states, may occur in the progressive aspect in English; (ii) accomplishments differ from activities in involving the notion of a goal (which Vendler also terms 'climax' or 'terminus'); (iii) states differ from achievements in optionally co-occurring with adverbials of duration, and can thus occur in questions introduced by *For how long*; (iv) achievements differ from accomplishments in referring to a punctual or momentary situation; (v) states differ from activities in lacking any notion of activity and therefore not being modifiable by adverbs such as *carefully*, etc. Using all but the first of these criteria, which is inapplicable in that German has no systematic markers of progressive aspect, I shall attempt to classify German prepositional predicates according to Vendler's system.

Consider the predicate underlying the preposition *an* in (384) above. There is no notion of goal here, and none of activity: *AN* may therefore be classed as a state. The predicate *UBER* underlying the preposition in (385) above involves no notion of goal, but the sentence does refer to an activity: *UBER* may thus be classed as an activity. The preposition *über* in (386) above cannot co-occur with an adverbial

1. It is immediately apparent that Vendler, by 'verbs', in fact means predicate-phrases, or perhaps even entire sentences.

of duration:

- (387) <sup>+</sup>Jetzt sind wir schon den ganzen Tag lang über den  
Kanal hinüber.

but rather the sentence refers to a momentary situation, the reaching of a destination. *UBER* in this sense is therefore to be classed as an achievement. The remaining category of accomplishments, goal-oriented but not punctual, is also appropriate for prepositional predicates, namely those with allative or ablative meaning, as realized by the prepositions *in* and *aus* in (388) and (389) respectively:

- (388) Wir wollen in die Schweiz fahren.

- (389) Er schritt aus dem Zimmer hinaus.

Allative accomplishment predicates, if realized as any of the set listed in (383) above, cause the noun following the preposition to appear in the accusative case-form; ablative accomplishment predicates are never realized as any of the set listed in (383), but as either *von* or *aus*, after which the dative case is required. Thus, generalizing from these particular examples, one can establish a rule that, where a predicate is realized as a preposition of variable case-requirement, the case chosen will be accusative, unless the predicate is classified as a state, in which instance the dative case-form must be chosen.

It remains to discuss the occurrence of the dative case-form after *über* in such sentences as (390):

- (390) Der Goldene Drache ist über der Strasse.

This usage of *über* Eggeling (1961:337) finds 'mainly characteristic of the coll. lang. [si<sup>2</sup>] , replaced in good prose by *jenseits*'. It would be possible to regard this usage of *über* as a stylistically determined variant of *jenseits*, but an account linking its occurrence to the properties of the predicate *ÜBER* would clearly be less *ad hoc*. Bennett (1975:36), discussing English locative prepositions, observes that 'some locative sentences ... identify a location by indicating the journey one would have to take in order to get there', and argues that many English prepositions may take such a path-interpretation, as for instance *under* in (391):

(391) The cathedral is under the bridge.

which, given the relative sizes of cathedrals and bridges, is most naturally interpreted in terms of a path leading from a deictic point of reference under the bridge to the cathedral, i.e. 'If you want to get to the cathedral (from here), you must go under the bridge'. This interpretation is not available for similarly constructed sentences in German, where (392) is (factually) absurd:

(392) Der Dom ist unter der Brücke.

In German, only two prepositions take's Bennett's path-interpretation, namely *über*, as in (390), and *um*, as in *Der Laden befindet sich um die Ecke*; only with *über*, however, does the question of case-government arise.

A satisfactory explanation for this usage of *über* may be derived from an observation of Vendler's (1967:109) that many activities, and some accomplishments and achievements, have a derived state sense,

where derivation is understood as a synchronic phenomenon. He instances *understand* and *know* as verbs in English which are basically to be classified as achievements, as in (393) and (394):

(393) It took me many hours' study to understand the complexities of his theory.

(394) And then suddenly I knew! (Vendler's example, 1967:112)

but which have a derived state sense:

(395) The guru understands the true purpose of life.

(396) I know every chapter of the Bible.

My suggestion is that the achievement sense of *über* exemplified in (386) above may be linked in the same way to the sense of *über* in (390) above: in other words, *über* in (390) carries a derived state sense, and the occurrence of the dative case is attributable to the very fact that the derived sense is a state. Thus, from (397):

(397) Wir müssen vor Sonnenuntergang über die Grenzen hinüber sein.

where 'our' position is seen as the result of motion across the frontier, is derived (398):

(398) Wir müssen vor Sonnenuntergang über den Grenzen sein.

which is an attested sentence from Schiller (cf. Eggeling, 1961:337), and which differs from (397) in not evoking the route 'we' must take, but only the endpoint as a location. In this connexion, it is interesting to note that the derived state-interpretation of *über* is



typically used to locate fixed, permanent entities, as in (399), where the associated achievement sense, as in (400), could not occur naturally:

(399) Der Gasthof ist über der Strasse.

(400) ?<sup>+</sup>Der Gasthof ist über die Strasse hinüber.

Not only achievements, but also accomplishments and activities can have derived state-senses. Consider the German adverbs with the suffix *-wärts* (*nordwärts*, *vorwärts*, *aufwärts*, ...), which, like the cognate English forms in *-wards*, have a dominantly activity sense. Some members of this set have a derived state sense co-existing with the activity sense: *rückwärts* may be glossed either as 'backwards' (activity) or 'at the back' (state); *auswärts*, similarly, may be glossed 'outwards' (activity) or 'outside' (state) -- indeed the latter sense predominates in contemporary German.<sup>1</sup> Consider also those place adverbs with suffix *-en* (*innen*, *aussen*, *hinten*, *oben*, etc.), whose historical antecedents had, in Old High German, a basically accomplishment sense (OHG *innana* 'from inside', *hindana* 'from behind', etc.), but also a derived state sense ('inside', 'behind', etc.) which has come to oust the original accomplishment sense entirely.<sup>2</sup> It thus

1. Certain English adverbs in *-wards* also have a derived state sense. Consider such examples as (i) and (ii):

(i) Passengers may not stand forwards of this line.

(ii) He earns upwards of £20,000 a year.

2. For further discussion, see Mackenzie (to appear).



appears that an explanation can be given for various aspects, synchronic and diachronic, of the adverbial system in German in terms of a tendency for non-state items to develop a derived state sense (which, in some cases, may even replace the original non-state sense).

It emerges from the above discussion that German prepositions manifest the same set of aspectual properties as have been independently shown to be characteristic of verbs. I take this to constitute further evidence for analysing prepositions as lexicalizing underlying predicates.

#### 4.4. Arguments from non-Indo-European languages

In previous sections, I have put forward various arguments suggesting that German prepositions should, like verbs, be derived from predicates in semantic structure. In this section, I shall consider whether the hypothesis might have more general validity for natural languages, by looking briefly at locational expressions in various non-Indo-European languages. In all these languages, parallelisms in the morphological and, above all, syntactic behaviour of lexical categories identifiable as those of prepositions and verbs strongly suggest an analysis conflating both categories in underlying structure.

##### 4.4.1. Mandarin Chinese

In Mandarin Chinese, there is a set of forms, frequently referred to as 'co-verbs', which fulfil the functions of case-markers and

prepositions in Indo-European languages. The term 'co-verb' is designed to bring out the fact that a large number of these forms are homophonous with semantically related full verbs. Thus, for example, *cháo*, *chòng*, *wàng*, and *xiàng* all translate as 'facing' when they occur as 'co-verbs', but as 'face' when they occur as full verbs; *gěi* and *wèi* are equivalent to English 'for', but also translate 'give' and 'be for the sake of' respectively.<sup>1</sup> Li and Thompson (1974b) argue convincingly that, despite the morphological identity, co-verbs form a different surface-structure category from verbs and suggest that they should be termed prepositions to give recognition to this fact. They are at pains to point out, however, that they do not rule out the possibility that these prepositions are indistinguishable from verbs in underlying structure.

One of the most frequently occurring prepositions is *zài* ('at'), which has, as its verbal homophone, the locative copula *zài*, glossed as 'be located at'. Thus, corresponding to (401):

(401) Tā zài xuexiào-lǐ chī fàn.

He at school-inside eats rice

'He eats rice in school.'

where *zài* is analysed as a preposition, occurs (402), where the same form is seen as the locative copula:

1. For an extensive list of Mandarin Chinese co-verbs, see Li and Thompson (1974b).

(402) Tā zài xuexiào-lǐ.

He is-located-at school-inside

'He is in school.'

It has been suggested by Teng (1974) that, in underlying structure, *zài* always occurs as a verb. He observes that the negative particle *bù* may be added to (401) at two points:

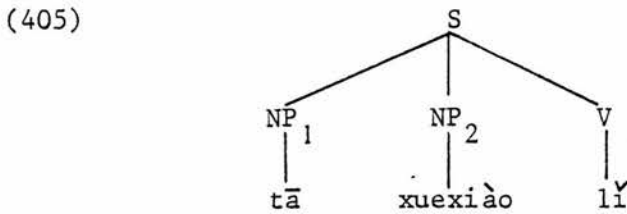
(403) Tā bù zài xuexiào-lǐ chī fàn.

(404) Tā zài xuexiào-lǐ bù chī fàn.

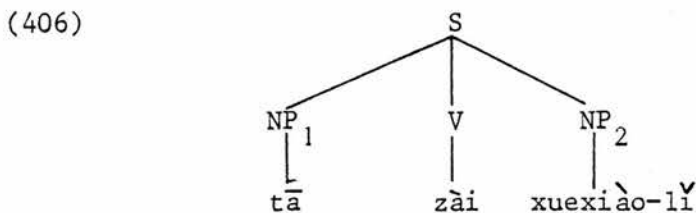
and points out that there is a corresponding difference in interpretation: the negative operator has differing scopes, depending upon the placement of *bù*. (403) may be glossed 'It's not in the school that he eats rice', whereas (404) may be glossed 'It's not the case that he eats rice in school'. Teng argues that 'if locative phrases are prepositional constituents of VP, as generally treated, we would have to resort to constituent-negation in order to account for the alternating positions of NEG' (1974:136). If Klima (1964) is right, Teng continues, in claiming that sentence-negation, generated through PS-rules, is generally productive, but constituent-negation is specified in the lexicon and is non-productive, the best analysis for such sentences as (401), (403) and (404) involves postulating two underlying clauses *Tā zài xuexiào-lǐ* and *Tā chī fàn*, either of which may be commanded by the negative operator NEG. In the first of the underlying clauses postulated by Teng, *zài* occurs as the locative copula; this I would see as supporting the claim that the two *zài*'s are underlyingly identical. Similar arguments may be devised for ascribing the

same source to other prepositions and their associated verbs.

Tai (1973) notices that *zài* functions as a general locative marker and therefore suggests that it is transformationally inserted as a verb. According to him, (402) above would be derived from an underlying structure (405):



The verb *lǐ<sup>v</sup>* is attached to *xuexiào* as a suffix and replaced by *zài*, which is subsequently sister-adjoined to the left of NP<sub>2</sub>, giving, as surface structure, (406):



The most unusual aspect of Tai's analysis is his assignment of *lǐ<sup>v</sup>* to the category 'verb'. Whereas, to him, *zài* is a 'general locative marker', *lǐ<sup>v</sup>* is a postposition and, therefore, for reasons akin to those discussed in 4.2.3 above (considerations of word order), is to be derived from an underlying predicate. In fact, *lǐ<sup>v</sup>* is one of an extensive set of forms optionally postposed to the noun in locative expressions in Mandarin Chinese. The semantic function of these forms being to specify the nature of the locative relation involved, they are frequently termed 'localizers'. (For discussion, and a catalogue of

such forms, see Chao, 1968) Thus (407) is glossed 'He is in front of the house', and (408) 'He is behind the house':

(407) Tā zài fāng-zi qián-tou.

He is-located-at house front

(408) Tā zài fāng-zi hòu-tou.

He is-located-at house rear

It is important to realize that all localizers may occur as autonomous nouns (but never as verbs), for example as subject or object of a sentence. Indeed, in locative expressions, they appear to form the second part of a nominal compound with the preceding noun, so that (407), for example, may be glossed literally as 'He is located at the house-front'. Evidence suggesting that this is a more satisfactory analysis may be seen in the fact, noted by Li and Thompson (1974a), that localizers carry neutral tones in speech, which is normal for the second elements of nominal compounds in Mandarin Chinese, and also in the fact that such compounds may occur themselves as autonomous heads of noun phrases. In this light, it would seem eminently preferable to assign localizers to the category 'noun' and to reject Tai's analysis as ill-founded.<sup>1</sup>

1. Tai (1975), without making reference to his earlier work, analyses *zài* and other 'co-verbs' as deriving from verbs which are present in underlying structure; he appears, therefore, to have abandoned his treatment of localizers as deriving from underlying verbs and 'co-verbs' as transformationally introduced 'locative markers'.

4.4.2. Ngoko-Javanese

In Ngoko-Javanese (my data are from Horne, 1961), the correspondences between verbal and prepositional forms is less striking than in Mandarin Chinese. Nonetheless, several forms classifiable as prepositions also function as main verbs. The preposition which expresses unmarked location, *něng*, occurs both as a preposition, as in (409), and as a verb, as in (410):

- (409) Ôpô kowé sinan tjôrô-Djôwô nêng ng-omah?  
Q-marker you study Javanese in locativemarker house  
'Do you study Javanese at home?'
- (410) Bukuku, nêng nduwor mēdjô.  
Book-my, is-at top table  
'My book is on top of the table.'

Similarly, *menjang* 'to' may occur either as a preposition, as in (411), or as a verb 'to go', as in (412) and (413):

- (411) Saqwisé sarapan, aku lungô menjang pasar, toko buah.  
After breakfast, I go to market, buy fruit  
'After breakfast, I go to the market to buy fruit.'
- (412) Saqwisé sarapan, aku menjang pasar, toko buah.  
( = (411))
- (413) Kowé menjang ndi?  
You go-to where  
'Where are you going to?'

Other forms with both prepositional and verbal functions are *n jebarang*

'across' and 'go across', and *nganggo* 'with' and 'use'. Although the set of prepositions overlaps with the set of verbs to a lesser degree than is the case in Mandarin Chinese, there is, *a priori*, a clear-cut case for analysing these prepositions as predicates.<sup>1</sup> One syntactic argument in favour of so doing may be derived from the observation that 'nasalization', the addition of a nasal prefix to the word-base, may supplement or substitute for either a preposition or a verb expressing location or direction. Thus, from *omah* 'house' may be constructed *nèng ngomah* or *ngomah*, either of which may be glossed as 'at home' or 'be at home', depending on the syntactic function being fulfilled. Clearly, the statement of the (optional) rule effecting 'nasalization' will be simpler and more general if the environment is represented in terms of one category (predicate) rather than two.

#### 4.4.3. Niger-Congo languages

A large number of Niger-Congo languages possess sets of morphemes which cannot easily be classified as verbs or prepositions. Just as discussion of analogous forms in Chinese required the invention of a term 'co-verb', so Africanists, following Ansre (1966), have come to refer to these phenomena as 'verbids'. 'Verbids', like co-verbs, are morphemes which may be realized either as uninflectable morphs ('prepositions') or as (to a certain extent) conjugable verbs whose base is homophonous with the prepositional forms. Bendor-Samuel (1971:160) observes that, within each of the Gur languages, there occurs a range

1. Indeed, Lakoff (1970) remarks, without further expatiation, that Javanese offers evidence for such an analysis.



of possible constructions involving 'verbid' (a term which he himself does not use):

1. Clauses follow one another in full form with co-ordinate or subordinate relationships;
2. Clauses follow one another, but in reduced form, e.g. there is no repetition of the subject and there are no conjunctions;
3. Verbs follow one another with no other phrases intervening between the verbs, but with all the verbs concerned being independent verbs and occurring with the marks of independent verbs;
4. Verbs following one another with the first verb in the series (or the last) not fully independent.

In the first case, there is no form identifiable as a verbid; in the second and third cases, the characteristic features of the verbid begin to emerge -- the deletion of the subject, the integration of the verbid into a complex verb phrase, and the juxtaposition of main verb and verbid; in the fourth, the verbid, i.e. the 'not fully independent' verb, has had its status reduced to that of a preposition. It cannot be doubted that, in a large number of Niger-Congo languages, there is an ongoing tendency for verbid-constructions to develop from constructions of Bendor-Samuel's first type: Westermann (1930:129) states that, in Ewe:

... many verbs when they stand next to others play the part of English prepositions, adverbs or conjunctions. Now many of these verbs, in playing the part of prepositions, etc., begin to lose their verbal characteristics, in that they are no longer conjugated.

and Bendor-Samuel (1971:160) talks of a 'dynamic process which is still operating'.

Boadi (1968:83) objects to Ansre's (1966) proposal to recognize a syntactic category 'verbid', since 'we cannot justifiably exclude items from a syntactic class (verbs, in this case) merely because they do not inflect'. Boadi's proposal is to treat all the forms discussed here as verbs, even in surface structure. What is attractive about this proposal is that it allows the linguist to account for the variation observable in contemporary Niger-Congo languages in terms not of the gradual emergence of a new category, for which syntactic as well as morphological evidence would have to be found, but rather of the progressive loss of redundant morphological markings in the realization of verbs conjoined in underlying structure. Consider, for example, (414), taken from a grammar of the Kolokuma dialect of Ijo (Williamson, 1965:47):

(414) Erí amá dũo you pa bõ-mi.

He town leave paddle emerge come-PAST

'He came paddling out from the town'

A plausible underlying structure for (414) would consist of a conjunction of four simple predications, in outline as in (415):

(415) (He left the town) & (He was paddling) & (He emerged)  
& (He came towards the speaker)

Given such an underlying structure, the surface structure is derived by combining all four verbs into one complex verb-phrase, deleting all

redundant specifications of subject, tense, etc. Evaluation of this proposal will have to await detailed examination of the syntactic status of verbids in the Niger-Congo languages. It is worth remarking, however, that Frajzyngier (1975), considering the status of verbids in Awutu, concludes that they cannot be analysed as case-markers in the Fillmorean sense (cf. 3.3.1 above), but rather as verbs both in underlying and surface structure, and that constructions of the 'serial verb' type exemplified by (414) above are attributable to a 'clause-conflating principle' (1975:359); in other words, Frajzyngier provides evidence for analysing each verbid as deriving from the main verb of a clause in underlying structure and as retaining that predicate status throughout the derivation.

#### 4.4.4. Squamish

Kuipers (1967) points out that in Squamish 'there are a number of verbs which imply a complement in the relative case (if expressed). Semantically, these verbs correspond to English prepositions' (1967: 153). The relative case is marked, if at all, by the prefix *t-*; its occurrence is constrained by phonological factors. Kuipers refers to the verbs in question as 'relator-verbs' and cites, among his examples, the following sentences and phrases:

(416) /na\_ua\_na? λ'a\_?əlqsn/  
           he<sub>asp.</sub><sup>prog</sup> is-at Point-Grey

'He is staying/living at Point Gray.'

(417) /naʔ t-kí kəkínʔ/

is-at rel. casemarker-old-times

'Long ago, ... '

(418) /tinaʔ ʔ-n λ'a ʔəlqsn/

am-from I Point-Grey

'I am from Point Grey.'

(419) /ʔ-n c'uʔn ta c'istn tinaʔ t-ta ʔaiʔanʔ/

I pulled the nail be-from rel. casemarker-the wall

'I pulled the nail out of the wall.'

(416) and (417) exemplify the relator-verb *naʔ* 'be at', 'be for', and (418) and (419) the relator-verb *tinaʔ* 'be from'. (416) and (418) demonstrate the use of relator-verbs in simple locational predications, (417) their 'prepositional use' in VP-Comps, and (419) their 'prepositional use' in V-Comps. It is even possible to combine two relator-verbs in a complex phrase to express a combination of source and goal:

(420) /tinaʔ tk'a shiʔs k'a sqxuʔmiʃ tx-tiʔ λ'a st'aʔməʃ/

be-from the upstream the Squamish directional  
region particle -move-down

the St'aʔməʃ

'From above Squamish right down to St'aʔməʃ.'

Squamish possesses a considerable number of such relator-verbs (for a list, and further exemplification, see Kuipers, 1967:153-154). They cover much the same semantic field as is covered by prepositions in Indo-European languages, and fulfil the same range of syntactic functions. There is clearly no motivation for recognizing a category of prepositions in the surface structure of Squamish, since the expression

of locational and other relevant relations is entirely fulfilled by the category of verbs. If there are no surface-structure prepositions, then, *a fortiori*, there is no justification for postulating their presence in underlying structure.

#### 4.4.5. Uto-Aztecan languages

It has been claimed that, in the Uto-Aztecan languages, directional adverbs, which I have argued in 1.3.1.1 above to be analysable, at least in English, as intransitive prepositions, are historically derived from verbs. Crapo (1970:183) maintains that:

... for the most part, directional adverbs were derived historically from certain of those secondary verbs which indicate motion in space or geographical position.

where secondary verbs are defined as those which 'in addition to serving independently as primary verbs, may also be used almost like (optional) suffixes with other primary verbs' (1970:182). Crapo's claim is based on (a) the semantic and morphological similarity of directional adverbs and corresponding verbs; (b) the fact that some directional adverbs retain the singular-plural distinction otherwise characteristic of verbs; (c) the fact that some directional adverbs retain tense distinctions; (d) the similar behaviour of directional adverbs and verbs with respect to phonological conditioning; and (e) the observation that expressions of spatial motion always precede those of 'temporal motion' (defined as change of temporal location), whether they take the form of a directional adverb or a verb. Crapo does not discuss the synchronic derivation of Uto-Aztecan directional adverbs,

but it is clear that the same five observations could be used as arguments in favour of postulating that the adverbs are synchronically derived from the same underlying configurations as the verbs.

#### 4.4.6. Pidgins and creoles

Martinet (1970) considers a construction which he claims to be typical of pidgins and creole languages:

(421) Me write letter give boy.

'I am writing a letter to the boy.'

He holds that, in general terms, it is the 'duty' of a 'complement' (i.e. adverbial) to mark its function, i.e. its relationship to the rest of the utterance. He notes that, in different languages, this is effected by any of, or a combination of the following syntactic devices: (a) specific markers (prepositions, case-endings, etc.); (b) word order; (c) inherent properties of the complement. By (c), Martinet means such adverbials as English *fast*, which always has a 'how-function', or *last year*, which always has a 'when-function'. He raises a fourth possibility to explain such constructions as (421):

It consists in using one verb per complement and a different one for each, as if the action itself were different when viewed from the point of view of the agent, that of the patient, or that of the beneficiary (1970:233).

According to this proposal, therefore, *give* in (421) would be analysed not as a preposition but as a verb. Martinet holds this analysis to be

perfectly plausible, given a syntax 'where every participant, agent included, would require its own predicative nucleus ... The lexical extravagance this seems to imply would be compensated for by the extreme simplicity of the grammatical relations' (1970:449). Thus, if Martinet's analysis is correct, pidgins and creoles possessing such constructions as (421) would appear to be further examples of languages in which the function of prepositions is assumed by verbs.

#### 4.4.7. Egyptian Colloquial Arabic

A further parallelism between the morphological properties of verbs and prepositions is noted by Sanders (1972:100), who claims that:

In languages where transitive verbs have suffixes agreeing in definiteness or in person-gender-number with their direct objects, prepositions also have suffixes that agree with their objects in the same categories.

He exemplifies from Egyptian Colloquial Arabic:<sup>1</sup>

(422) Il-walad il-bint darab-~~it~~-u.

The-boy the-girl hit-she-him

'The girl hit the boy.'

1. I am grateful to Mahmoud Abd El-Ghani Ayad for verifying the correctness of these data and rectifying one small error in Sanders' original.



(423) Il-sitt il-bint darab-it-ha.

The-woman the-girl hit-she-her

'The girl hit the woman.'

(424) Id-dulaab taht-u trāab.

The-cupboard under-it dust

'There's dust under the cupboard.'

In (424), the suffix *-u* agrees with the masculine noun *dulaab* in person, number and case in just the same way as *-u* in (422) and *-ha* in (423) agree with masculine singular accusative *il-walad* and feminine singular accusative *il-sitt* respectively. Again, the relevant generalization is more simply captured if both prepositions and verbs are assigned to the same syntactic category (of predicates).

#### 4.4.8. Maori

Sanders (1972:101) claims that one important difference between verbs and prepositions is that 'verbs may have tense or aspect or superficial-subject-agreement, while prepositions and postpositions never have such affixes'. This is not to say, however, that prepositions cannot realize tense or aspect<sup>1</sup> distinctions. In Maori, the preposition equivalent to English *at* is realized differently according to the tense of the sentence in which it occurs. In fact, in propositions whose tense is not otherwise specified, the preposition carries the tense. The surface forms are *i*, *kei*, or *hei* according as

1. For a discussion of aspectual distinctions realized by prepositions, see 4.3.4.1 above.

the sentence is in the past, present, or future tense respectively.

Consider the following sentences:<sup>1</sup>

(425) I te kuki te māhita.

At<sub>[past]</sub> the cooking the teacher

'The teacher was cooking.'

(426) Kei te kuki te māhita.

At<sub>[pres]</sub> the cooking the teacher

'The teacher is cooking.'

(427) I hea koe?

At<sub>[past]</sub> where you

'Where were you?'

(428) Kei hea koe?

At<sub>[pres]</sub> where you

'Where are you?'

(429) Hei hea koe?

At<sub>[fut]</sub> where you

'Where will you be?'

There is no sentence <sup>+</sup>*Hei te kuki te māhita* 'The teacher will be cooking', since there is no equivalent to the English 'future progressive' in Maori. Thus, just as certain prepositions in German were seen in 4.3.4.1 above to carry aspectual distinctions, customarily associated with verbs, so do these Maori prepositions carry tense

1. The data are taken from a talk, 'Maori', by Miss Winifred Boagey in the Department of Linguistics, Univ. of Edinburgh, 1974.

distinctions of the type normally borne by verbs.

## CHAPTER V

### THE PREPOSITIONAL PHRASE IN GERMAN

#### 5.1. Introductory remarks

On the strength of the evidence accumulated in Chapter IV, I intend in this chapter to put forward an analysis of German prepositions in terms of the relationships between the predicates which I take them to lexicalize, and to integrate the analysis into an account of the various syntactic roles that may be played by prepositional phrases on the basis of the discussion in Chapters I to III. In this way, I shall be able to offer several generalizations about the 'status' of prepositional phrases in a transformational grammar of German.

#### 5.2. Spatial prepositions in German

Membership of the category of prepositions in a language such as German is established primarily by means of syntactic criteria. It is however generally recognized that the class of prepositions performs a specific semantic function, namely the expression of certain types of relational meaning. None of these is expressed exclusively by prepositions: the relation of containment, for example, may be expressed by a verb (*erhalten*, *beinhalten*, ...), by a noun (*Inhalt*, *Gehalt*, ...), or by a preposition (*in*, *innerhalb*, ...). Nonetheless, there is a particularly close relationship between these types of meaning and the class of prepositions.

It is conventional to distinguish three major semantic functions

of prepositions: the expression of spatial, temporal, and abstract relations. Spatial prepositions serve to locate an entity or situation (or a class of entities or situations) with respect to another entity or a place (or a class of entities or places). Temporal prepositions indicate the relative sequence in time (or simultaneity) of two or more situations. 'Abstract prepositions' express a multifarity of other types of relation. One of the major contributions of case grammar (see 3.3 above) has been the attempt to elaborate a taxonomy of abstract (i.e. non-spatial and non-temporal) relations. Fillmore (1968) recognizes six abstract cases, namely agentive, instrumental, objective, factitive, benefactive, and dative; he concedes, however, that 'additional cases will surely be needed' (1968:25). He proposes only one spatial and one temporal case; as discussed in 3.3.1 above, he takes the distinctions between the various spatial and temporal prepositions to be indicated in the lexicon, but does not enter into consideration of the structure of the systems of locative and temporal prepositions. Anderson (1971) has explored the possibility that many of the abstract cases proposed by Fillmore and others may be accounted for in terms of location and direction, notions which were associated by Fillmore only with the case 'locative'. He has pointed, for example, to the parallelism of ergative (Fillmore's agentive) and ablative (Anderson, 1971:173-175); of instrumental and prolativ (the path case) (1971:169-172); and of dative and locative (1971:102-105). Anderson has also argued (1973:14) that 'temporal adverbials represent a sub-type of locative phrase characterized by their including a particular kind of NP whose area of reference is the dimension of time'. Thus Anderson's general hypothesis, which he terms 'localistic', is that

there are 'common principles underlying spatial and non-spatial cases' (1971:12), and that these are most profitably described using the notions that would occur in an autonomous description of spatial cases.

Adoption of the localistic approach to the meaning of case-markers and prepositions has the important implication for the study of prepositions that the analysis of the expression of spatial relations becomes a prerequisite for the examination of the expression of temporal and abstract relations. It is for this reason that I will concentrate my attention in the following discussion on the spatial prepositions of German, pointing up, where relevant, implications for the analysis of temporal and abstract prepositions.

#### 5.2.1. The expression of 'unmarked location'

Any description of the system of spatial prepositions in German must take account of the fact that the language lacks any preposition of 'unmarked location', i.e. there is no preposition expressing spatial relation without specifying which type of relation is involved. It has been suggested that English possesses just such a preposition, namely *at*, especially by Bennett (1975:67), who takes *at* to realize the 'deep case' locative; all other spatial prepositions of English receive more complex case-representations:

(430)	<i>at</i>	:	locative(
	<i>in</i>	:	locative(interior(
	<i>from over</i>	:	source(locative(path(locative(superior(

In similar vein, Clark (1973:40) claims that 'the most neutral prepositions in English are *at*, *on* and *in*' and maintains that *at* is the



least marked of the three.

One important consequence of Bennett's claim is that all English prepositions which have 'locative' as their leftmost meaning-component are hyponymous to *at*. One would therefore expect that, for every spatial predication involving a preposition other than *at*, there is an entailed predication with *at*. This would appear to be borne out by (431) and (432):

(431) They are standing under the tree.

(432) They are standing at the tree.

There are, however, countless exceptions. Few speakers accept that (433) entails (434), and none that (435) entails (436):

(433) The dog is under the table.

(434) The dog is at the table.

(435) The church is beyond the post-office.

(436) ?The church is at the post-office.

Bennett contends (1975:68) that the entailment of (434) by (433), and of (436) by (435), is dubious only because the entailed predication gives an incomplete rather than inaccurate account of the situation described, claiming that, in a situation where various people are leaning with their backs against various objects, *Trevor is at the sofa*, otherwise of questionable acceptability, would be an appropriate way of describing Trevor's location, since his position with respect to the sofa is obvious from the situation and need not be specified. Whereas Bennett's argument takes care of the relationship between (433) and (434), it cannot handle the non-entailment of (436) from (435); given that *beyond* is analysed as *locative(path(locative(, (436) should follow*



from (435).

I believe that the major shortcoming of Bennett's analysis of *at* is that it fails to recognize that the preposition is appropriate only when the entities it relates are in juxtaposition; that is, I take juxtaposition to be a necessary meaning-component of *at*. Bennett's confusion arises, I would suggest, from his failure to discern a general, but by no means binding pragmatic constraint which may be formulated as follows:

- (437) *Pragmatic juxtaposition constraint*: predicate  
locative relations of entities only when they  
occupy the same area of space.

The extent of 'the same area of space' may of course vary enormously according to the universe of discourse and can ultimately be determined only subjectively. The constraint may in some cases run parallel to the semantic content of the preposition (as with *in*, *on*, *near*, etc.); in other cases, it may or may not (as with *above*, *under*, etc.); and in yet other cases, the constraint may be largely overridden by the semantic content of the preposition (as with *beyond*). Thus I would propose that the only reason that (432) appears to follow from (431) is that 'they' and 'the tree' would normally be understood as occupying 'the same space', i.e. as being juxtaposed, and this is exactly what is asserted by (432); why (436) does not follow from (435) is that 'the church' would not naturally be understood as occupying 'the same space' as the post-office', which is, I would suggest, asserted by (436). My point is, then, that Bennett is misguided in assuming that all spatial

prepositions of English are hyponymous to *at*; rather there is a pragmatic constraint upon the appropriate use of spatial prepositions which coincides with the meaning of *at*. The fact that this constraint is not binding explains why certain sentences containing spatial prepositions do not entail corresponding sentences with *at*.

#### 5.2.2. Prepositions and dimension-types

Catford (1959) presents an analysis of English prepositions which takes *at*, *on*, and *in* to be the three basic prepositions of 'static contiguity', characterized by 'neutrality', 'exteriority', and 'interiority' respectively. This analysis has been taken up and extended by Leech (1969:Ch. 8); Leech's work has been incorporated into Quirk *et al.* (1972:307 ff.). Leech argues (1969:161-163) that *at* is appropriate where the dimensionality of the referent of the governed NP is perceived by the speaker as irrelevant; that *on* occurs where the location object is perceived as one- or two-dimensional; and *in* where the location object is perceived as two- or three-dimensional.

Of particular interest here is the claim that *at* occurs only when the speaker perceives the location object without regard to its dimensionality. Jessen (1975), following Lindkvist (1950:133), refers to this as the 'point apprehensibility' of the location object. In German, there appears to be no preposition which causes the location object to be perceived as a point (i.e. as zero-dimensional). Consider (438) to (442) below, each of which exemplifies the use of *at* discussed by Leech and Jessen, and compare the German translational equivalents, (443) to (447) respectively:

- (438) May the children sit at table?  
(439) They met at a ball.  
(440) There were 50,000 spectators at the football-match.  
(441) What did you do at school today?  
(442) Let's meet at the town-hall.  
  
(443) Dürfen die Kinder am Tisch sitzen?  
(444) Sie haben sich auf einem Ball kennengelernt.  
(445) Es waren 50.000 Zuschauer bei dem Fussballspiel.  
(446) Was hast du heute in der Schule gemacht?  
(447) Wir wollen uns vor dem Rathaus treffen.

There is, however, one preposition which does ascribe point apprehensibility to the location object, namely *zu*. This preposition is however no longer productive in its locative meaning in contemporary standard German,<sup>1</sup> occurring only in fixed locutions -- cf. (448) -- and in formal usage -- cf. (449):

- (448) zu Hause, zu Bett, zu Wasser und zu Lande, zur Rechten,  
zu beiden Seiten, etc.  
(449) die Universität zu Köln, der Gasthof zum Fuchsen, etc.

In none of the sentences (443) to (447) above could the prepositions be replaced by *zu*, and in many of the fixed locutions exemplified in (448), a 'fuller preposition' is often preferred:

- (450) im Bett, auf dem Wasser, auf der rechten Seite,  
auf beiden Seiten, etc.

1. Compare however Swiss German, where *z* is productive before place-names: *z Züri* 'in Zürich', *z Schottland* 'in Scotland'.

The fact that the locative (as opposed to the directional) use of *zu* is no longer productive in contemporary German leads me to conclude that it should be excluded from further consideration here. There is thus no member of the set of locative prepositions in German which is equivalent in meaning and function to English *at*.

Let us now consider in more general terms whether the theory of dimension-types derived from Leech (1969), a theory which has clarified many problems of English prepositional meaning, is also applicable to the semantic analysis of German prepositions. The dimension-type of a preposition is defined by Quirk *et al.* (1972:308) as 'the dimensional property ascribed, subjectively speaking, to the location denoted by the prepositional complement'. Three dimension-types are recognized for English:

Dimension-type 0, e.g. *at* (*at the shop, at the North Pole*)

Dimension-type 1/2, e.g. *on* (*on the Thames, on the wall*)

Dimension-type 2/3, e.g. *in* (*in the world, in a box*)

A nominal denoting a location object perceived as two-dimensional is preceded by a preposition of dimension-type 1/2 when the object is apprehended as a surface (e.g. *on the wall, on the ceiling*) and by a preposition of dimension-type 2/3 when it is apprehended as an area (e.g. *in the world, in the village*).

Consider now the German prepositions *in*, *auf* and *an*. German *in* differs from its English cognate in co-occurring with nominals denoting objects perceived as three-dimensional (*im Kasten, im Badezimmer*,

*im Dom*). *Auf* requires that the location object be perceived as either two- or three-dimensional and that it have a top-surface (*auf der Welt*, *auf dem Dorf*, *auf dem Kasten*). *An* co-occurs with nominals denoting objects of any subjectively perceived dimensional properties whatever: *an einzelnen Punkten* ( $\emptyset$ -dimensional); *an der Grenze* (1-dimensional); *an der Wand* (2-dimensional); *an der Schule* (3-dimensional). It might therefore be argued that three dimension-types should also be recognized for German:

Dimension-type 0-3, e.g. *an*

Dimension-type 2/3, e.g. *auf*

Dimension-type 3, e.g. *in*

This classification would have to be supplemented with a statement of the conditions determining which of the three prepositions occurs when the location object is perceived as three-dimensional, for example to the effect that *in* occurs where there is a relation of containment, *auf* where there is contact with the top-surface of the location object, and *an* where there is a relation of immediate proximity or contact with some other surface than the top one. Note, however, that the dimension-types of the three prepositions are merely the logical consequence of these conditions. Containment generally presupposes a three-dimensional location object (expressions such as *im Kreis*, *im Viereck* constitute a small class of exceptions); hence it is sufficient to state that *in* is the preposition of containment and the restrictions on the perceived dimensionality of the location object follow automatically. Similarly, for an entity to be in contact with the top-surface of another, the latter must be perceived as at least two-dimensional; again the

specification of dimension-type follows from the definition of *auf* as the preposition of 'superior contact' (cf. 5.2.4 below). Finally, an entity may be in immediate proximity ~~to~~ another irrespective of the latter's apprehended dimensional properties and in contact with any object of at least one dimension; *an* is thus adequately defined as the preposition of 'immediate proximity or contact' (cf. 5.2.4 below). My conclusion is, therefore, that the classification of German prepositions into dimension-types is uneconomical and unilluminating, and that a more profitable attack on the structure of the German prepositional system may be achieved by identifying the range of spatial relations that may be expressed by the prepositions in terms of the predicates that they may be assumed to lexicalize.

### 5.2.3. Deictic prepositions

There is a fundamental distinction to be drawn between two types of preposition, 'deictic' and 'non-deictic'. Non-deictic prepositions are those which express a two-place relation between a locandum and a location object. Deictic prepositions, on the other hand, express a three-place relation between a locandum, a location object and an observer, actual or imaginary. Thus, for example, the interpretation of *um*, a non-deictic preposition, in (451) is constant, irrespective of the point from which the phenomenon being described is viewed:

(451) Die Erde dreht sich um die Sonne.

In (452), on the other hand:



- (452) Bei einer totalen Sonnenfinsternis verschwindet die  
Sonne hinter dem Mond.

the interpretation of *hinter*, a deictic preposition, depends crucially upon the fact that the event being described is observed from a particular vantage-point: the sun is behind the moon only with respect to a limited set of observers (i.e. those situated in the shadow of the moon). The real-world interpretation of deictic prepositions will differ, therefore, from one utterance to the next, whereas that of non-deictic prepositions will be the same in all utterances. While it is not the semanticist's function to predict the interpretation of deictic expressions in individual utterances, he must make provision for the greater complexity of the semantic representation of such expressions. My proposal is to treat non-deictic prepositions as the lexicalization of dyadic predicates, and deictic prepositions as the lexicalization of triadic predicates. The third argument of such triadic predicates may, in any utterance, be left unrealized where the identity of the observer is readily recoverable from the situational context of the utterance; where this is not the case, it may be realized by such expressions as *von hier aus*, etc.

It is important to stress that the observer may be either actual or imaginary. An 'actual observer' may be identifiable with the speaker, the addressee, a third party spoken of, or even a location (as in *vom Berggipfel aus*), or indeed as any combination of these. An 'imaginary observer' does not coincide necessarily with any actual observer, but rather with a point from which the relation is typically viewed. 'Typical viewpoints' are determined by considerations of



anthropocentric extension as discussed in 4.3.3.2 above. There is never any surface realization of the imaginary observer's viewpoint. To clarify the distinction, let us consider the ambiguity of *vor* analysed in 4.3.3.2 above, and exemplified there by (379), here repeated for convenience:

(379) Er stand vor dem Wagen.

Where the interpretation of (379) is 'He stood between the observer and the car', the observer is actual; cf. the paraphrase-possibilities indicated in (453):

(453) Er stand zwischen mir/dir/ihm (*etc.*) und dem Wagen.

Where the interpretation is 'He stood in the area adjacent to the front of the car', i.e. involves anthropocentric extension, the observer is imaginary: he is imagined as being situated at a point further from the car than the referent of *er* such that the referent of *er* is located between the imaginary observer and the car, and furthermore as facing that part of the car which leads when the car is in motion (conventionally recognized by anthropocentric extension as 'the front'). Thus the ambiguity of (379) is a function of the status of the observer. Where there is an actual observer, (379) is potentially ambiguous, since there is always the possibility of an imaginary observer being situated in that position in which interaction with the location object (here, the car) typically takes place; where there is no actual observer, such sentences as (379) are not ambiguous: the second interpretation (involving the imaginary observer) is the only possibility. The fact that the presence or absence of an actual

observer is dependent upon the individual situation of utterance leads me to conclude that the ambiguity is pragmatic rather than semantic and that one semantic representation for the predicate(s) underlying *vor* should be sought.

It emerges from the above discussion that the hypothesized prepositional predicate *VOR* may be treated as the deictic equivalent of the (non-deictic) *ZWISCHEN*, since if the locandum (L) is situated *vor* the location object (LO) with respect to an observer (O), whether actual or imaginary, then the locandum must also lie *zwischen* the location object and the observer:

$$VOR(L, LO, O) \equiv ZWISCHEN(L, LO, O)$$

Similarly, for the converse of *VOR* (initially represented in 4.3.3.2 above as *HINTER*):

$$VOR'(L, LO, O) \equiv ZWISCHEN(LO, L, O)$$

Note further that since  $ZWISCHEN(x, y, z) \equiv ZWISCHEN(x, z, y)$ , it follows that:

$$VOR(L, LO, O) \equiv ZWISCHEN(L, O, LO)$$

Thus a more economical inventory of prepositional predicates will be achieved if *VOR* (and, *a fortiori*, *HINTER*) are dispensed with, and *vor* and *hinter* regarded as optional realizations of *ZWISCHEN* triggered when its second and third arguments denote a location object and an observer, in either order. There are however constraints on the realization of appropriate instances of *ZWISCHEN* as *vor/hinter*: (a)

where the observer is imaginary, *vor/hinter* must be chosen, since, as mentioned above, an imaginary observer is never realized in the surface structure; (b) the pragmatic juxtaposition constraint (see 5.2.1 above, (437)) operates much more strongly for *vor/hinter* than for *zwischen*, so that *vor/hinter* will be preferred when the locandum is in relative juxtaposition to the location object. Consider, in this latter regard, (454), with the speaker as (actual) observer, as against (455):

(454) Er steht vor dem Haus.

(455) Er steht zwischen mir und dem Haus.

Both sentences may be used to describe the same situation, but with the difference that (454) tends to suggest that the referent of *er* is in greater relative proximity to the house.

There is another pair of deictic prepositions that may be regarded as realizing *ZWISCHEN*, namely *diesseits* and *jenseits*. These prepositions realize *ZWISCHEN* where the second or third argument is an actual observer who is situated in 'the same space' as the speaker and where the location object is thought of as a barrier. Consider, for example, the paraphrase relation between (456) and (457):

(456) Das Haus liegt jenseits des Flusses.

(457) Der Fluss liegt zwischen mir/uns (*et c.*) und dem Haus.

The remaining pair of deictic prepositions in German, *rechts* and *links*, which may take either a dependent NP in the genitive case or, more frequently, a dependent PP introduced by *von*, may be seen as realizing *NEG(ZWISCHEN)*. (458) and (459), for example, are

incompatible with (460) and (461):

- (458) Er stand rechts vom Eingang.
- (459) Er stand links vom Eingang.
- (460) Er stand vor dem Eingang.
- (461) Er stand zwischen mir und dem Eingang.

In (458) and (459), the locandum is situated to one or other side of a line connecting the observer, actual or imaginary, to the location object; the fact that it is not situated on that line justifies the introduction of the negative operator *NEG* with *ZWISCHEN*(L,L0,0) as its scope. Where the locandum is located to the same side of the line as the observer's right hand, the realization is *rechts*; otherwise, *links*. Introducing a predicate *RECHTS* to represent this meaning-element (the choice of predicate-name is arbitrary), *rechts* may be regarded as lexicalizing the predicates in:

*NEG(ZWISCHEN(L,L0,0)) & RECHTS(L,L0,0)*

and *links* as lexicalizing the predicates in:

*NEG(ZWISCHEN(L,L0,0)) & RECHTS(L0,L,0)*

In this way, all deictic prepositions turn out to be connected through the predicate *ZWISCHEN*, the incompatibility of both (458) and (459) with either (460) or (461) is explained, and the number of triadic predicates is restricted to two, namely *ZWISCHEN* and *RECHTS*.

#### 5.2.4. Non-deictic prepositions

Non-deictic prepositions may be divided into those which denote

a relation of containment and those which do not. Traugott (1974) has argued that this is a fundamental distinction in locational systems across a wide range of languages, instancing the contrast in Bantu languages between the particle *mu* 'within' and *pa* '(close) by, at, near, (up)on', and the major division of Finnish surface cases into the interior local cases (inessive, elative, and illative) and the exterior local cases (adessive, ablative, and allative). Language-internal justification for treating containment *vs.* non-containment as basic in German is difficult to find. It is however instructive to note that the commonest preposition of containment, *in*, is the most frequently occurring of German prepositions (Meier, 1964), and that it is used in a wide range of metaphorical extensions denoting general 'abstract location': *in* functions, for example, as the unmarked preposition of temporal location (cf. *in dieser Zeit*, *in der Gegenwart*, *im Alter von sechs Jahren*, etc.) and also for locating animate beings in states (cf. *Er ist in Macht*, *in Verzweiflung*, *in Not*, *in Trauer*, etc.).

A relation of containment will be said to hold whenever the location object physically includes the locandum. Where the predicate of containment is realized by *in*, it is not necessary that there should be no part of the locandum lying outside the bounds of the location object, so that (462) is true even if the greater part of Hans' body is not surrounded by water:

(462) Hans sitzt im Badewasser.

Where total inclusion is insisted upon, the predicate of containment *IN*



may be realized as *innerhalb*; for this purpose, a predicate *TOTINCL* will be postulated. *NEG(IN(* is not realized by *aus*, which, when used in locative contexts, is an achievement preposition (see 5.2.5 below), but by *ausserhalb*. *NEG(IN(* is realized by *ausserhalb* only when it is inappropriate or irrelevant to specify the locative relation with exactitude, as in (463):

(463) Er arbeitet in der Stadt, wohnt aber ausserhalb.

More typically, *NEG(IN(* is, as will emerge below, associated with other predicates in the semantic representation of non-containment prepositions.

Prepositions of non-containment may be classified according to the following criteria: (a) whether or not the locandum is in contact with the outer surface of the location object; (b) whether the locandum is related to the location object on the horizontal or vertical plane. Let us consider each of the four combinatory possibilities.

Contact on the horizontal plane. The only preposition realizing this combination (*HOR & CON*) is *an*:

(464) Das Gemälde hängt an der Wand.

(465) Das Kind lag an meiner Brust.

(466) Das Brett lehnt an der Mauer.

Non-contact on the horizontal plane. German distinguishes between immediate and general proximity, and further subclassifies

immediate proximity into lateral and non-lateral. General proximity is signalled by *bei*, as in (467):

(467) Wir wohnen bei der Post.

In contemporary German, *bei* is frequently replaced in this sense by *in der Nähe von*, *bei* being now largely restricted to fixed locutions involving place-names, as in (468) and (469):

(468) Die Schlacht bei Jena.

(469) Potsdam bei Berlin.

The locative sense of *bei* most frequently encountered in the contemporary language is 'at the domicile/workplace of'.<sup>1</sup> Immediate lateral proximity, where the locandum is located with respect to a side of the location object, is realized by *neben*, or optionally, if the location object is a person, by the postpositive expression *zur Seite*:

(470) Ich sass neben ihr.

(471) Ich sass ihr zur Seite.

(472) Das Theater steht neben der Universitätsbibliothek.

Immediate non-lateral proximity is expressed by *an*, as in (473):

(473) Ich stand an der Bushaltestelle.

Contact on the vertical plane. Contact is possible with either the top-surface or the bottom-surface of the location object.

'Superior contact' is expressed by *auf*, as in (474), and 'inferior

1. The full range of *bei*'s meanings is discussed by Dreike (1973).



contact' by *unter*, as in (475):

(474) Das Essen steht auf dem Tisch.

(475) Das Notizbuch liegt unter dem Wörterbuch.

Non-contact on the vertical plane. 'Superior non-contact' is expressed by *über*, as in (476), and also by *oberhalb*; 'inferior non-contact' is expressed by *unter*, as in (477), or by *unterhalb*:

(476) Die Wolken schweben über dem Meer.

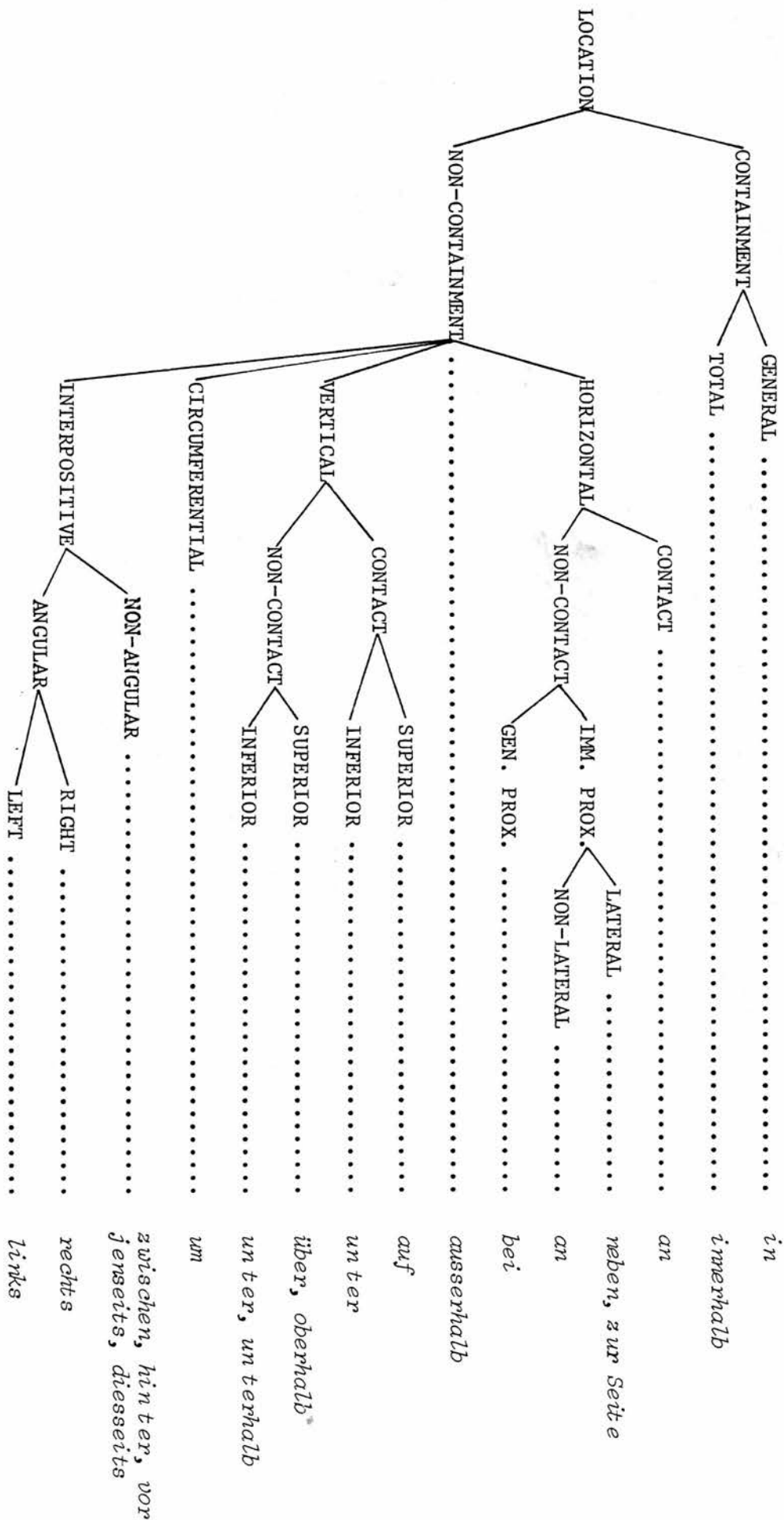
(477) Das Kindlein spielte unter dem Tisch.

Mention should also be made of one preposition of non-containment which stands by itself in being indifferent to considerations of contact/non-contact and horizontality/verticality, namely *um*, which indicates that the locandum is in a position whereby it surrounds, partially or totally, the location object, as in (478):

(478) Die Familie sitzt um den Tisch.

It is now possible to summarize the preceding discussion of the system of German locative prepositions by means of a diagrammatic representation which accounts for both deictic and non-deictic prepositions; see Table 3 overleaf.

Table 3



Let us postulate, on the basis on the information summarized in Table 3, a limited set of semantic primes of spatial location:

- a predicate of containment *IN*;
- a predicate of location *LOC*;
- a predicate of total inclusion *TOTINCL*;
- a predicate of horizontal dimensionality *HOR*;
- a predicate of vertical dimensionality *VERT*;
- a predicate of circumposition *CIRC*;
- a predicate of interposition *INTERPOS*;
- a predicate of contact *CON*;
- a predicate of immediate proximity *IMMPROX*;
- a predicate of lateral proximity *LATPROX*;
- a predicate of superior position *SUP*.

The semantic representation of propositions involving the prepositions listed in Table 3 will be a conjunction of predications characterized by at least two of the above predicates, as follows:

L ist in LO	<i>LOC(L,LO) &amp; IN(L,LO)</i>
L ist innerhalb LO	<i>LOC(L,LO) &amp; IN(L,LO) &amp; TOTINCL(L,LO)</i>
L ist an <sub>1</sub> LO	<i>LOC(L,LO) &amp; NEG(IN(L,LO)) &amp; HOR(L,LO) &amp; CON(L,LO)</i>
L ist neben LO	<i>LOC(L,LO) &amp; NEG(IN(L,LO)) &amp; HOR(L,LO) &amp; NEG(CON(L,LO)) &amp; IMMPROX(L,LO) &amp; LATPROX(L,LO)</i>
L ist LO zur Seite	do.
L ist an <sub>2</sub> LO	<i>LOC(L,LO) &amp; NEG(IN(L,LO)) &amp; HOR(L,LO) &amp; NEG(CON(L,LO)) &amp; IMMPROX(L,LO) &amp; NEG(LATPROX(L,LO))</i>

L ist bei LO	$LOC(L, LO) \ \& \ NEG(IN(L, LO)) \ \& \ HOR(L, LO) \ \& \ NEG(CON(L, LO)) \ \& \ NEG(IMMPROX(L, LO))$
L ist ausserhalb LO	$LOC(L, LO) \ \& \ NEG(IN(L, LO))$
L ist auf LO	$LOC(L, LO) \ \& \ NEG(IN(L, LO)) \ \& \ VERT(L, LO) \ \& \ CON(L, LO) \ \& \ SUP(L, LO)$
L ist unter <sub>1</sub> LO	$LOC(L, LO) \ \& \ NEG(IN(L, LO)) \ \& \ VERT(L, LO) \ \& \ CON(L, LO) \ \& \ SUP(LO, L)$
L ist über LO	$LOC(L, LO) \ \& \ NEG(IN(L, LO)) \ \& \ VERT(L, LO) \ \& \ NEG(CON(L, LO)) \ \& \ SUP(L, LO)$
L ist oberhalb LO	do.
L ist unter <sub>2</sub> LO	$LOC(L, LO) \ \& \ NEG(IN(L, LO)) \ \& \ VERT(L, LO) \ \& \ NEG(CON(L, LO)) \ \& \ SUP(LO, L)$
L ist unterhalb LO	do.
L ist um LO	$LOC(L, LO) \ \& \ NEG(IN(L, LO)) \ \& \ CIRC(L, LO)$
L ist zwischen LO <sub>1</sub> und LO <sub>2</sub>	$LOC(L, LO_1) \ \& \ LOC(L, LO_2) \ \& \ NEG(IN(L, LO_1)) \ \& \ NEG(IN(L, LO_2)) \ \& \ INTERPOS(L, LO_1, LO_2)$
L ist vor LO	do.
L ist hinter LO	do.
L ist rechts von LO (O = observer)	$LOC(L, LO) \ \& \ LOC(L, O) \ \& \ NEG(IN(L, LO)) \ \& \ NEG(IN(L, O)) \ \& \ NEG(INTERPOS(L, LO, O)) \ \& \ RIGHT(L, LO, O)$
L ist links von LO (O = observer)	$LOC(L, LO) \ \& \ LOC(L, O) \ \& \ NEG(IN(L, LO)) \ \& \ NEG(IN(L, O)) \ \& \ NEG(INTERPOS(L, LO, O)) \ \& \ RIGHT(LO, L, O)$

#### 5.2.4.1. Accomplishment and activity prepositions

Corresponding to each of the prepositions listed in Table 3 above, all of which are aspectually 'states' (cf. 4.3.4.1 above), there are four further prepositions, two of which are aspectually accomplishments and two activities. Such prepositions occur in predications of movement, in prepositional phrases indicating (a) the location from which the locandum departs (the source -- accomplishment preposition); (b) the set of points through or near which the locandum passes in its movement (the path -- activity preposition); (c) the destination at which the locandum arrives and comes to rest (the goal -- accomplishment preposition); or (d) the direction in which the locandum moves (the direction -- activity preposition). These phrases may occur either singly, or in combination, as in (479):

- (479) Er stürzte an mir vorbei (*path*) aus der Küche  
(*source*) in das Esszimmer (*goal*).

##### 5.2.4.1.1. Prepositions of source

Corresponding to all the various prepositions of spatial location in German there are only two prepositions of source. *Aus* is appropriate where the movement originates at a point inside the location object; it thus corresponds to *in* and *innerhalb*. The 'ablative' counterpart of most other locative prepositions involves *von*.<sup>1</sup> In some

1. The *aus*--*von* opposition may be seen as further evidence for the primacy of the relation of containment (cf. 5.2.4 above).

instances, *von* precedes the locative preposition, as in *von ausserhalb* and *von jenseits*; in others, *von* stands by itself, so that the exact nature of the location at the source is left unspecified. In this latter case, the source-location may be inferred from the goal-expression, if present, as in (480):

(480) Das Kind sprang vom Tisch herunter.

The presence of *herunter* 'to a lower level and towards the speaker' entails that the child was originally on top of the table. In further instances, particularly where the locative preposition typically suggests that the locandum is obscured from the observer by the location object (as with *hinter* and *zwischen*), no source preposition is used, the ablativity being deducible from the co-occurrence of the goal-expression *hervor* 'out and towards the speaker'. The full set of correspondences is shown in Table 4:

Table 4

Locative	Source
in	aus
innerhalb	aus
an	von
neben	von
zur Seite	von
bei	aus der Nähe von
auf	von
unter (contact)	von
über, oberhalb	von oberhalb
unter (no contact)	unter ... hervor

Table 4, contd.

Locative	Source
unterhalb	von unterhalb
ausserhalb	von ausserhalb
zwischen	zwischen ... hervor
hinter	hinter ... hervor
jenseits	von jenseits
diesseits	von diesseits
rechts	von rechts
links	von links
um	<i>no equivalent</i>
vor	<i>no equivalent</i>

#### 5.2.4.1.2. Prepositions of goal

The set of goal-prepositions, unlike that of source-prepositions, is structured very similarly to the set of locative prepositions. In many instances, the goal-prepositions are homophonous with their locative counterparts, the difference being manifested in surface structure, if at all, by the case-affixes on the governed NP, according to the principles discussed in 4.3.4.1 above. There are also four goal-prepositions which have no direct correspondents among the set of locative prepositions, namely *nach*, *zu*, *gegen*, and *bis*.

*Nach*, which is most frequently encountered as a directional (activity) preposition (see 5.2.4.1.4 below), is used in a goal (accomplishment) sense where the location object is a place, provided that the place-name does not include the definite article: *nach Deutschland*,



*nach* Edinburg, ?<sup>+</sup>*nach* der Schweiz, <sup>+</sup>*nach* der Hauptstrasse. *Nach* may be analysed, in this sense, as a suppletive variant of *in*, which occurs before those place-names which do include the definite article: *in die Schweiz*, *in die Hauptstrasse*.

*Zu* stands in paradigmatic relation with *in*, *an*, and *neben*, typically occurring where the movement is seen as purposive:

- (481) Wir wollen mal *in* die Stadt fahren!
- (482) Die Touristen wollten unbedingt noch auf den Markt.
- (483) Der vornehme Herr setzte sich *neben* uns.
- (484) Ich muss noch heute zur Stadt fahren.
- (485) Die Hausfrau geht jeden Tag zum Markt.
- (486) Der vornehme Herr setzte sich zu uns und knüpfte gleich ein Gespräch mit uns *an*.

Sentences (481) to (483) are neutral with respect to any connotation of purposiveness on the part of the referent of the subject, whereas (484) to (486) would normally occur where the movement is subordinated to some further purpose, implicit or explicit. Often, *zu* is appropriate only when the intended purpose is the normal one for the location object: thus, *zu Bett gehen* may be used only of going to bed in order to sleep; a child crawling into a bed to hide *kriecht ins*/<sup>+</sup>*zu Bett*.

*Gegen* occurs not only as an activity preposition ( see 5.2.4.1.4 below) but also as an accomplishment preposition; in this latter sense, it corresponds to *an* where the location object is seen as a support for the locandum or as bringing the movement to an abrupt end:

- (487) Ich stellte das Rad an/gegen die Mauer.  
 (488) Das Rad steht an der Mauer (<sup>+</sup>gegen die Mauer).  
 (489) Der Rennfahrer fuhr gegen einen Baum.

*Bis* occurs most frequently as a modifier of prepositions and place adverbs with the sense 'throughout the movement described but no further'; it may however also occur as a preposition equivalent to *bis + nach* (in the accomplishment sense of *nach*):

- (490) Sie fuhr mit mir bis *or* bis nach London.

The full range of correspondences between locative and goal-prepositions in German is given in Table 5:

Table 5

Locative	Goal
in(nerhalb)	in, zu, nach, bis
an	an, zu, gegen
neben	neben, zu
zur Seite	zur Seite, zu
bei	in die Nähe von
ausserhalb	aus
auf	auf
unter(halb)	unter
über, oberhalb	über
um	um
zwischen	zwischen
hinter	hinter
vor	vor

Table 5, contd.

Locative	Goal
jenseits	über ... hin, nach der anderen Seite von
diesseits	über ... her, nach dieser Seite
rechts	nach rechts
links	nach links

5.2.4.1.3. Prepositions of path

German path-prepositions are activity prepositions in the sense of 4.3.4.1 above, being compatible with duration adverbials and not being goal-directed. They may also be brought into correspondence with the set of locative prepositions to be found in Table 3 above. Thus, for example, when a locandum passes *durch einen Tunnel*, it traverses a set of points each of which is *in dem Tunnel*; similarly, when a locandum goes *über die Straße*, it passes through a set of points each of which is *auf der Straße*. There is indeed a general correspondence between *in* and *durch*, although *durch* is replaceable by *über* before place-names, and between both *auf* and locative *über* and path *über*; consider (491) to (494):

- (491) Wir wanderten durch den Wald.
- (492) Wir fahren über Hamburg nach Berlin.
- (493) Wir gingen über die Brücke.
- (494) Der Wind blies über die Heide.

The path-prepositions corresponding to the remaining locative pre-

positions are largely homophonous with those locative prepositions, although some require the co-occurrence of a disambiguating goal-expression, either *vorbei* (or *vorüber*), co-occurring with *an*, *hinter*, and *vor*, or *hindurch*, co-occurring with *unter* and *zwischen*. The full range of correspondences is given in Table 6:

Table 6

Locative	Path
in, innerhalb	durch, über
an, neben, bei	an ... vorbei
ausserhalb	an ... vorbei
auf	über
über, oberhalb	über
unter(halb)	unter ... hindurch
zwischen	zwischen ... hindurch
hinter	hinter ... vorbei
vor	vor ... vorbei
jenseits	jenseits
diesseits	diesseits
rechts	rechts
links	links
um	<i>no equivalent</i>

5.2.4.1.4. Prepositions of direction

Mention must finally be made of those activity-prepositions which indicate not the path of a movement but its direction. These

resemble goal-prepositions in that the movement tends towards the location object, the difference being that, with goal-prepositions, the location object is necessarily the end-point of the movement, whereas, with direction-prepositions, the location object serves to indicate the general direction of the movement. Where the location object is not animate, German disposes of the preposition *nach*, which may precede an NP or a place adverb, and the postposition *zu*, which may follow only an NP; where the location object is animate, the ambiposition *auf ... zu* or, where the location object is also approaching the locandum, the postposition *entgegen* may be used:

- (495) Wir fahren nach dem Meer.
- (496) Wir fahren dem Meere zu.
- (497) Wir fahren nach oben.
- (498) <sup>+</sup>Wir fahren oben zu.
- (499) Ich lief auf meine Mutter zu.
- (500) Ich lief meiner Mutter entgegen.

*Gegen* is also used as a direction-preposition, but only in relatively fixed locutions, such as *gegen Süden*, *gegen die See hin*.

#### 5.2.5. Representation of preposition-types

It emerges from 5.2.4 that it is possible to distinguish five types of preposition with regard to their semantic characteristics. The classification is summarized in Table 7 overleaf:

Table 7

State	Accomplishment	Activity
Locative	Source	Path
	Goal	Direction

It will be noted that the class of achievement prepositions discussed in 4.3.4.1 above has been omitted from discussion here. This is because they are derivable from accomplishment prepositions: corresponding to each predication involving an achievement preposition there is a predication with a homophonous accomplishment preposition which is logically prior to it and from which it may be derived by deletion of the verbal element (which lexicalizes the 'mode of locomotion' component, which is irrelevant for achievement predications):

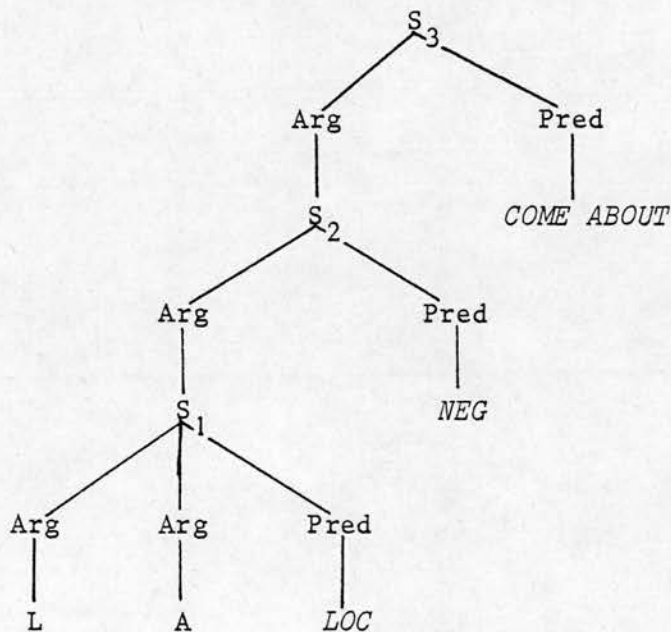
- (501) Wir sind über den Kanal hinübergeflogen.
- (502) Wir sind über den Kanal hinüber.
- (503) Wir sind aus dem Hafen hinausgesegelt.
- (504) Wir sind aus dem Hafen hinaus.

The tripartite aspectual classification may be translated in a relatively straightforward manner into the type of semantic representation that incorporates such predicates as those discussed in 5.2.4 above. State prepositions lexicalize conjunctions of predicates, as detailed above. Movement predications involving accomplishment prepositions may specify either the source-location or the goal-location, or both. They may therefore be regarded as carrying, embedded within them, one or two (state) predications. These embedded predications may be represented in the same way as non-embedded state



predications; indeed the parallelism between the structure of the system of locative prepositions and that of the systems of source and, above all, goal prepositions strongly suggests such an analysis. In moving from location A to location B, the locandum L ceases to be located with respect to A and comes to be located with respect to B. Furthermore, every source-predication carries with it a locative presupposition: for L to move from A at time t presupposes that L was at A at time t - n. I would suggest, therefore, that, underlying source-predications, there is the following type of representation, coupled with a statement of the presupposition of prior location at A:

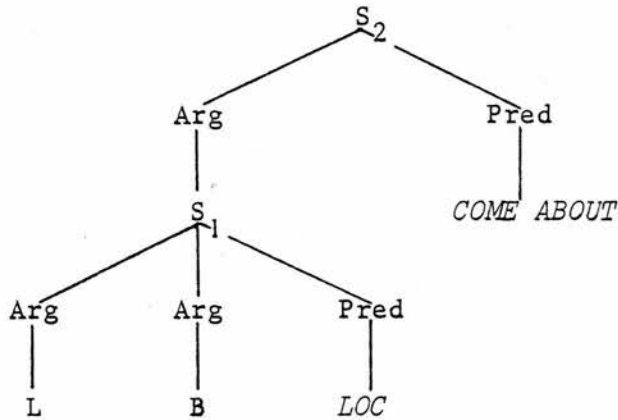
(505)



I would further suggest that, underlying goal-predications, there is the following type of structure, with no additional presuppositions:



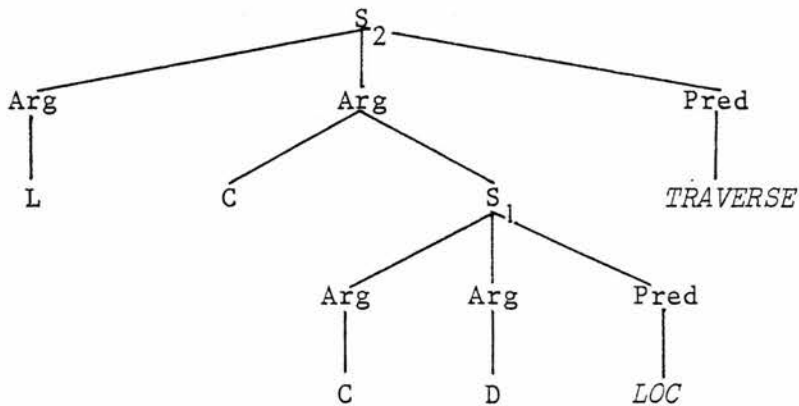
(506)



In both (505) and (506),  $S_1$  may be expanded as a conjunction of predications, in accordance with 5.2.4 above.

Activity prepositions have the function of indicating either the location traversed by a moving locandum or the direction of the movement. To represent path-prepositions, it will be necessary to introduce a predicate *TRAVERSE* which takes, as its first argument, the locandum and, as its second, a set of points characterized by a common location which is specified in a dependent state predication:

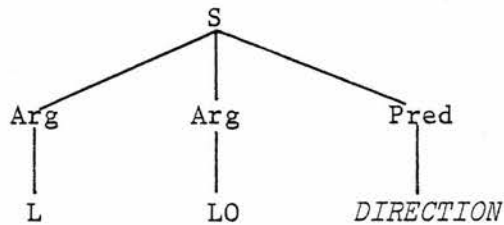
(507)



Again, to  $S_1$  may be conjoined further predications, the predicates being selected according to the combinatory possibilities set out in

5.2.4 above; the realizations are those listed in Table 6 above (5.2.4.1.3). Direction-prepositions may simply be regarded as realizing a predicate *DIRECTION* which takes as its first argument the locandum and as its second the location object which specifies the direction:

(508)



The realization of *DIRECTION* will depend upon the semantic characteristics of the location object, as discussed in 5.2.4.1.4 above.

The analysis of the various types of prepositional meaning offered here has the advantage of linking source-, goal-, and path-predications in an explicit manner to locative predications by embedding the latter within the former in semantic representation. This is in accord with the parallelism between the internal structure of the four sets of prepositions, a parallelism which is not displayed by the set of direction-prepositions, which indeed receive a different underlying representation. In the following section, it will be shown how the various types of prepositional expression integrate into the semantic structure of the sentence.

### 5.3. Generation of prepositional phrases

A fundamental distinction has been drawn in preceding chapters between VP-Comps and V-Comps; it has been shown how they may be distinguished by means of syntactic tests. Corresponding to the syntactic

distinction, there is an important semantic distinction which must be captured in semantic representation.

### 5.3.1. Generation of VP-Comps

Whereas V-Comps may be characterized by prepositions of any of the five types discussed in 5.2.4 above, VP-Comps involve exclusively state prepositions:

- (509) An der Grenze kontrollieren die Zollbeamten die Pässe.
- (510) <sup>+</sup>An die Grenze kontrollieren die Zollbeamten die Pässe.
- (511) <sup>+</sup>Von der Grenze kontrollieren die Zollbeamten die Pässe.
- (512) <sup>+</sup>Über die Grenze kontrollieren die Zollbeamten die Pässe.
- (513) <sup>+</sup>Nach der Grenze kontrollieren die Zollbeamten die Pässe.
- (514) Die Zollbeamten stehen an der Grenze.
- (515) Wir fahren an die Grenze.
- (516) Wir fahren von der Grenze weg.
- (517) Wir fahren über die Grenze.
- (518) Wir fahren nach der Grenze.

Thus VP-Comps, as is clear from (509) to (513), always have a locative function, in contradistinction to V-Comps, (514) to (518), which display the full range of semantic functions. It may appear at first sight that the VP-Comp in such a sentence as (509) locates the referents of the various NPs in the sentence with respect to the location object, i.e. that the customs officials and the passports are located at the border. This cannot be upheld, however, in the light of such sentences as (519), where no individuals are mentioned:

(519) An der Grenze erfolgt die Passkontrolle.

Rather it is the case that the VP-Comp locates the entire situation described by the rest of the sentence. Thus, in (509), it is the inspection of the passports by the customs officials that is located at the border. The location of the officials and the passports is not stated as such in (509), but is merely a pragmatic consequence of their involvement in the situation being described. That it is not a necessary consequence is shown by such a sentence as (520):

(520) Auf der Strasse sah ich die Kinder.

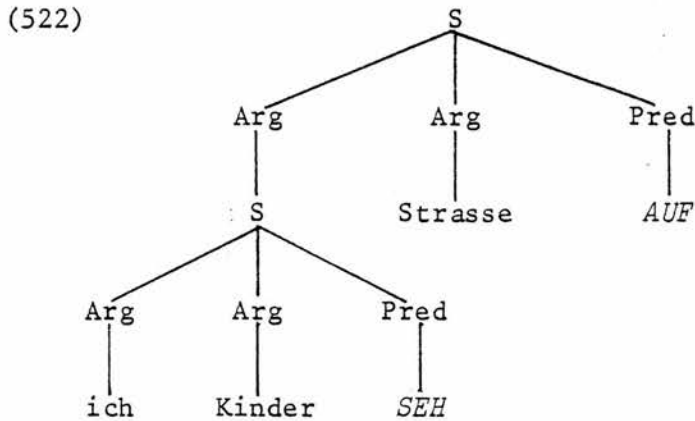
The VP-Comp *auf der Strasse* locates the event of my seeing the children, but it is perfectly possible that either I or the children, though admittedly not both, might not be in the street. VP-Comps must therefore be carefully distinguished from those prepositional phrases which do locate the referents of individual NPs within the sentence. Consider, for instance, (521):

(521) Ich sah die Kinder auf der Strasse.

This sentence may be assigned two surface-structure analyses, each of which reflects a different underlying structure. In one reading, *auf der Strasse* locates the children: here there is no major constituency break after *Kinder*. In the other reading, *auf der Strasse* locates the entire event of my seeing the children: this is reflected in the surface status of the prepositional phrase as a VP-Comp.

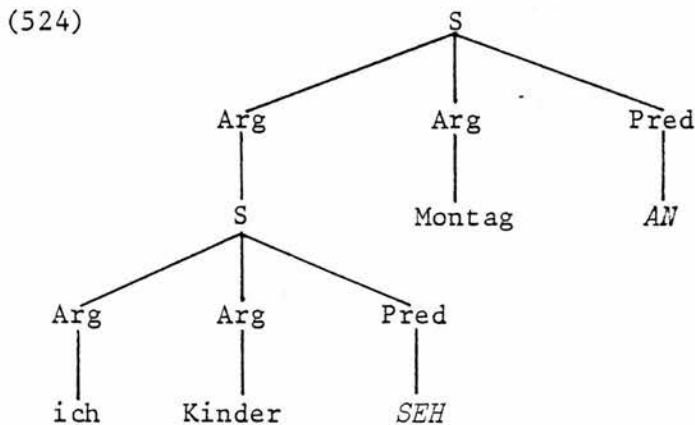
The 'event-locating' function of the VP-Comp may be captured by proposing that, underlying every VP-Comp, there is a predication the

first argument of which is necessarily propositional (i.e. is an embedded S). Thus, (520) and (521), in its second reading, are to be given an underlying representation of the following type, where *AUF* represents a conflation of the various predicates underlying the preposition *auf* and where tense, definiteness, etc. are ignored:



VP-Comps of time will similarly be analysed as deriving from predi-  
cations superordinate to the main verb of surface structure: thus  
(523) will be assigned the representation (524), which again includes  
only essential details.

(523) Ich sah die Kinder am Montag.



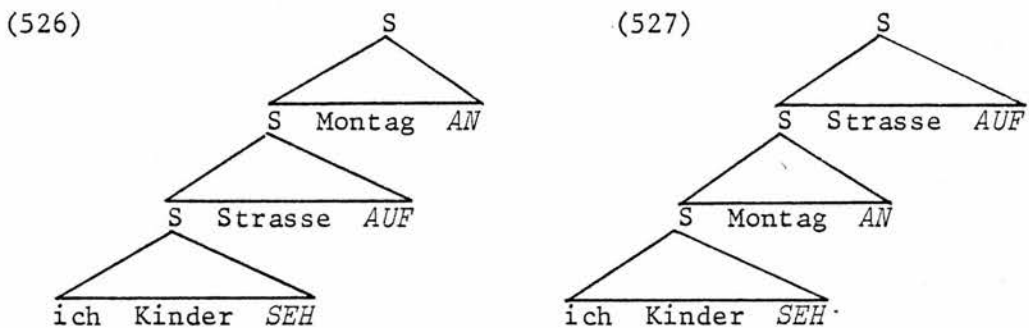
The major advantage of this type of representation is that it  
accounts for the scope-relations holding between the VP-Comp and the

rest of the sentence. Just as, in logic, the scope of an operator is that part of the formula which lies within the domain of application of that operator, so the scope of an adverbial is that part of the remainder of the sentence to which the adverbial relates: in (523), for example, *ich sah die Kinder* is the scope of *am Montag*, since the time-expression relates to the entire remainder of the sentence. Constituent-structure semantic representations of the type utilized here make scope-relations completely explicit by treating the scope of an expression as being derived from material embedded within the predication underlying that expression.

Problems arise, however, when more than one VP-Comp is present in the sentence, as in (525):

(525) Ich sah die Kinder am Montag auf der Strasse.

Two competing analyses suggest themselves, namely (526) and (527):



Analysis (526) has the rest of the sentence as the scope of *am Montag*; analysis (527) has it as the scope of *auf der Strasse*. It would be justified to assign two underlying structures to (525) only if it could be shown to be ambiguous, but there is no evidence to suggest this to be the case. A way of determining which of the two analyses should be

adopted is proposed by Siegrist (1972), who suggests that unmarked surface-structure order directly reflects underlying scope-relations, claiming that adverbials lie within the scope of adverbials that occur to their right in surface structure. If Siegrist is correct, his proposal would greatly simplify the problem of the derivation and ordering of VP-Comps. The unmarked surface-order of adverbials is relatively fixed in German. Siegrist (1972), having established various types of adverbial according to their semantic characteristics, claims that the left-right ordering of adverbials in German is as follows:

SENTENTIAL -- REASON -- TIME -- REPETITIVE -- DURATIVE --  
MANNER -- INSTRUMENTAL -- LOCATIVE

Thus, according to Siegrist, VP-Comps of time, which precede VP-Comps of place ('locative'), should be analysed as embedded within place-predications in underlying structure; in other words, (527) would be the sole underlying representation of (525). Unfortunately, there is no evidence -- and none is presented by Siegrist -- for any correlation between the surface-order of adverbials and scope-relations. Indeed, it appears highly implausible that sentential adverbials (*möglicherweise*, etc.) should be regarded as falling within the scope of place adverbials in all cases. Consider (528):

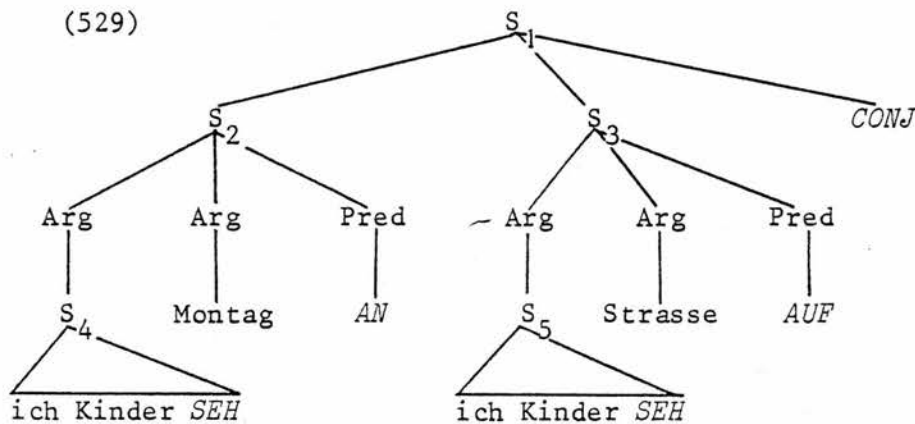
(528) *Möglicherweise* erdolchte er sie in der Küche.

There is no justification for analysing *möglicherweise* as being dominated in underlying representation by *in der Küche*; such a claim would be tantamount to paraphrasing (528) as 'A possibility existed in



the kitchen that he stabbed her'. Rather, *möglicherweise* should be seen as deriving from the higher predication, as the term 'sentential adverbial' indeed implies. Siegrist's proposals for the dominance-relations between adverbial predications are therefore at variance with the scope-relations which dominance is intended to reflect.

There is, however, an alternative analysis possible for such sentences as (525), where it is undecidable which adverbial has the other within its scope. I would suggest deriving such sentences from conjoined structures of the following type, where the left-right ordering of  $S_2$  and  $S_3$  is arbitrary:



According to this analysis, only *ich sah die Kinder* lies within the scope of each of the adverbials. It might however be objected that (529) could also underlie some such sentence as (530):

(530) Ich sah die Kinder am Montag und ich sah die Kinder  
auf der Strasse.

where the seeing of the children on Monday and the seeing of the children in the street are perceived as separate events. I propose, however, that the operator *CONJ* have the function of linking predications

that relate to the same event; the operator *UND*, on the other hand, will link predications that relate to separate events. *CONJ* is not realized in surface structure, the conjunction of the resultant VP-Comps being expressed merely by their juxtaposition; *UND* is realized in surface structure by *und*. Further motivation for the introduction of an operator *CONJ* will be found in the discussion of V-Comps below (5.3.2). Since *CONJ* links predications that all relate to the same event, the left-right ordering of these predications in the underlying representation is arbitrary. As regards surface-structure order, I suggest that, where more than one VP-Comp is present, the unmarked order be imposed by a language-specific constraint, based, for example, on Siegrist's ordering of adverbials. This would ensure, for instance, that VP-Comps of place would always follow VP-Comps of time, irrespective of the order in which the underlying predications are generated.

#### 5.3.2. Generation of V-Comps

The term 'V-Comp' has been used above to cover both prepositional objects, where the preposition has a 'translative' function, and also those prepositional phrases which have close cohesion with the verb but whose preposition has identifiable semantic content, referred to above as 'prepositional complements'.

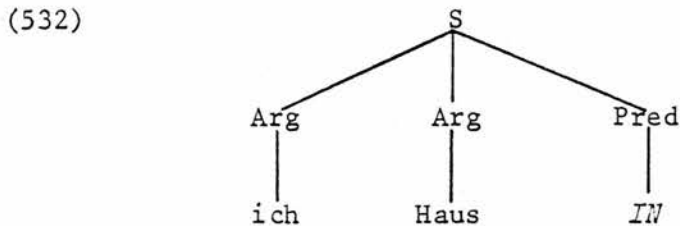
Prepositional objects will be derived in a manner consistent with the discussion in 3.2.1 above as the result of a preposition-adjunction transformation. The preposition, being meaningless, is not present in the semantic representation, but originates from the lexicalization of a predicate or complex of predicates as Verb + Preposition. The

resultant preposition is subsequently adjoined to the NP realizing the object argument of the predicate.

#### 5.3.2.1. Copular V-Comps

The remaining set of V-Comps may be divided into those co-occurring with copular verbs in surface structure and those co-occurring with 'full verbs'. 'Copular V-Comps' are derived from predicational structures whose first argument is necessarily non-propositional. Thus the semantic structure of (531) may be represented as (532):

(531) Ich bin im Haus.



The copula is supplied by a transformational rule that ensures that there is a finite verb present in every non-reduced clause. It is now clear that the difference between VP-Comps and copular V-Comps is essentially that the former require a propositional first argument, whereas the latter require a non-propositional first argument.

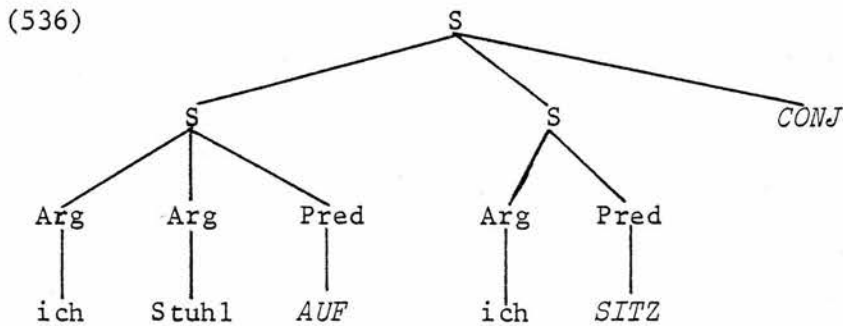
Copular V-Comps of the type exemplified by (531) do not occur frequently in German, the verb *sein* being replaced either by the explicitly locative or modal *sich befinden*, as in (533) and (534):

(533) Ich befinde mich im Haus.

(534) Ich befinde mich in der besten Laune.

or by an 'attitudinal' verb such as *sitzen*, *liegen*, *stecken*, *stehen*, etc. I would propose treating *sich befinden* as a copula occurring in locative and modal contexts, and sentences with attitudinal verbs as deriving from a conjunction of predications, so that (535) receives the representation (536):

(535) Ich sitze auf dem Stuhl.



Copular V-Comps necessarily involve state prepositions. An explanation must therefore be given for such apparent exceptions to this generalization as (537) to (540):

(537) Er ist aus der Schweiz.

(538) Ich bin nicht von hier.

(539) Wir sind jetzt schon über den Kanal hinüber.

(540) Er ist heute nach Rom.

(537), despite the presence of the source-preposition *aus*, is understood as stative: 'He is a native of Switzerland'. Rather than add *aus* to the list of state prepositions and postulate a further predicate, it seems preferable to invoke the notion of derivation discussed in 4.3.4.1 above and to regard *aus* as a state preposition derived from a source-preposition. In other words, the sense of (537) is derived from

that of (541):

(541) Er ist aus der Schweiz hierher gekommen.

*Von*, in (538), is similarly interpreted as stative, 'resident (in)'; this sense is again derivable from the fundamental ablative sense of the preposition. Sentences such as (539) have already been discussed in 4.3.4.1 above, and exemplify state predications derived from goal-predications. (540), finally, is an exception of a different type, being understood as a directional predication with the paraphrase (542):

(542) Er ist heute nach Rom gefahren.

(540) must be seen as the result of an optional transformation which deletes movement verbs in construction with an auxiliary verb, provided that there is no 'mode of locomotion' component that cannot be readily reconstructed from the context:

(543) Wir wollen in die Stadt fahren!

→ Wir wollen in die Stadt!

(544) Er wollte ins Zimmer kriechen.

↗ Er wollte ins Zimmer.

Thus, *nach Rom* in (540) should be analysed as a non-copular V-Comp, the full verb having been deleted.

#### 5.3.2.2. Non-copular V-Comps

Non-copular V-Comps may involve any of the five types of preposition discussed above, state, goal, source, path, or direction.

Let us now consider how to integrate the structures proposed in 5.2.4 above for each type of prepositional expression into a unified treatment of non-copular V-Comps.

Those with state prepositions are found in co-occurrence with such verbs as *bleiben*, *lassen*, and *ankommen*:

(545) Er bleibt in der Ecke.

(546) Er liess seinen Regenschirm auf dem Tisch.

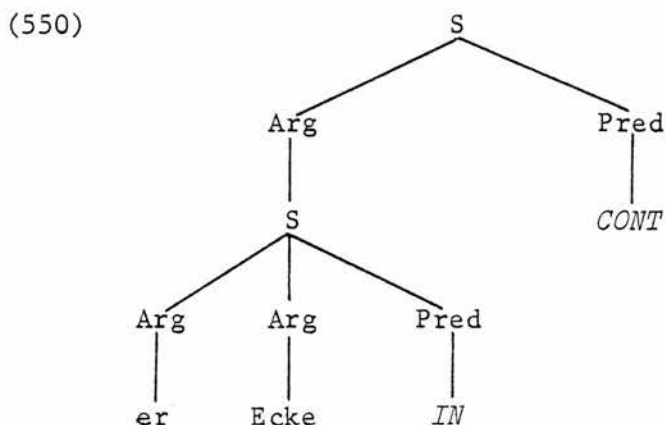
(547) Er kam in der Stadt an.

Both (545) and (546) have paraphrases involving attitudinal verbs:

(548) Er bleibt in der Ecke stehen/sitzen/hocken/etc.

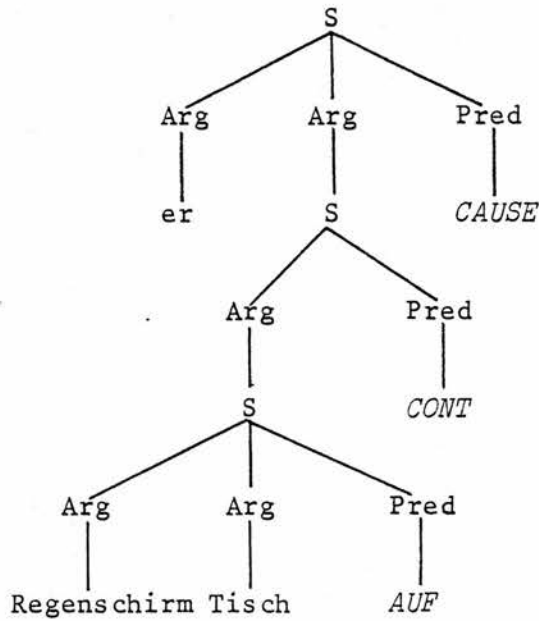
(549) Er liess seinen Regenschirm auf dem Tisch liegen.

On the assumption that the semantic representations of (545) and (548) and those of (546) and (549) are identical but for the additional attitudinal component in (548) and (549), and analysing *bleiben* as lexicalizing *CONT* (= a complex of predicates indicating the perpetuance of an already existing state) and *lassen* as lexicalizing *CAUSE(CONT)*, the following semantic representation may be given for (545):



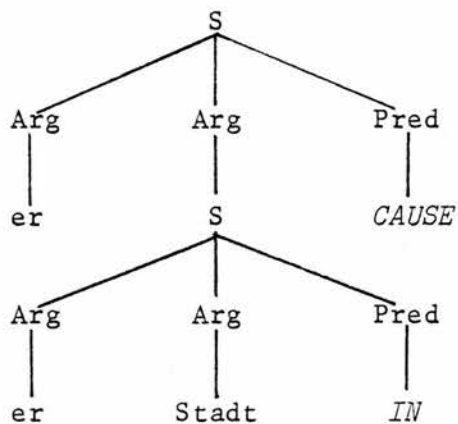
and for (546):

(551)



Note that the predication underlying the V-Comp is embedded within that part of the semantic representation which is realized as the subject and main verb of the sentence. A similar representation, with the embedding of the V-Comp predication, suggests itself for (547):

(552)

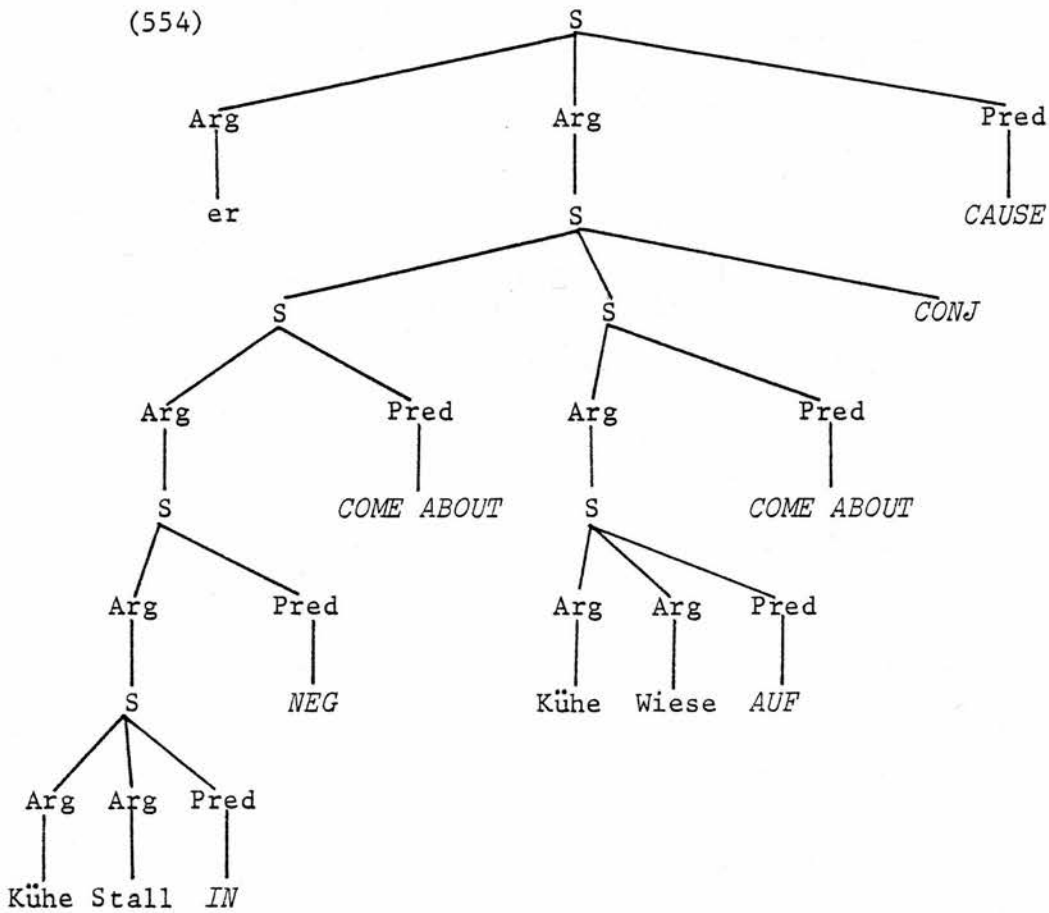


V-Comps of source and goal may similarly be analysed in terms of the embedding of locative predications under a causative predicate.

Consider (553), for which I propose the following representation:

(553) Er trieb die Kühe aus dem Stall auf die Wiese.

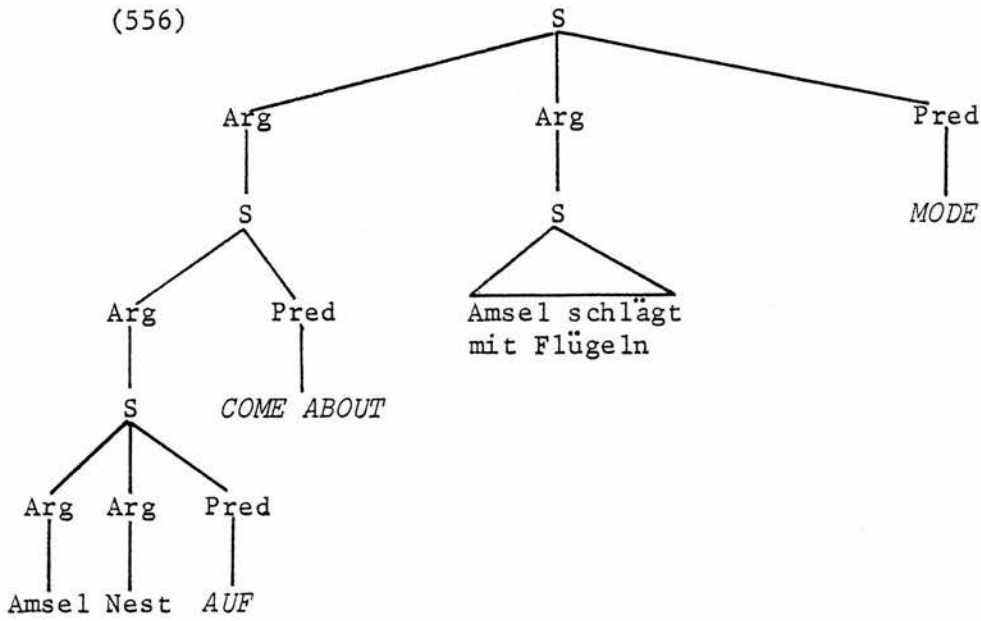




Where the movement is not caused by an outside agent, as for example in (555):

(555) Die Amsel flog auf ihr Nest.

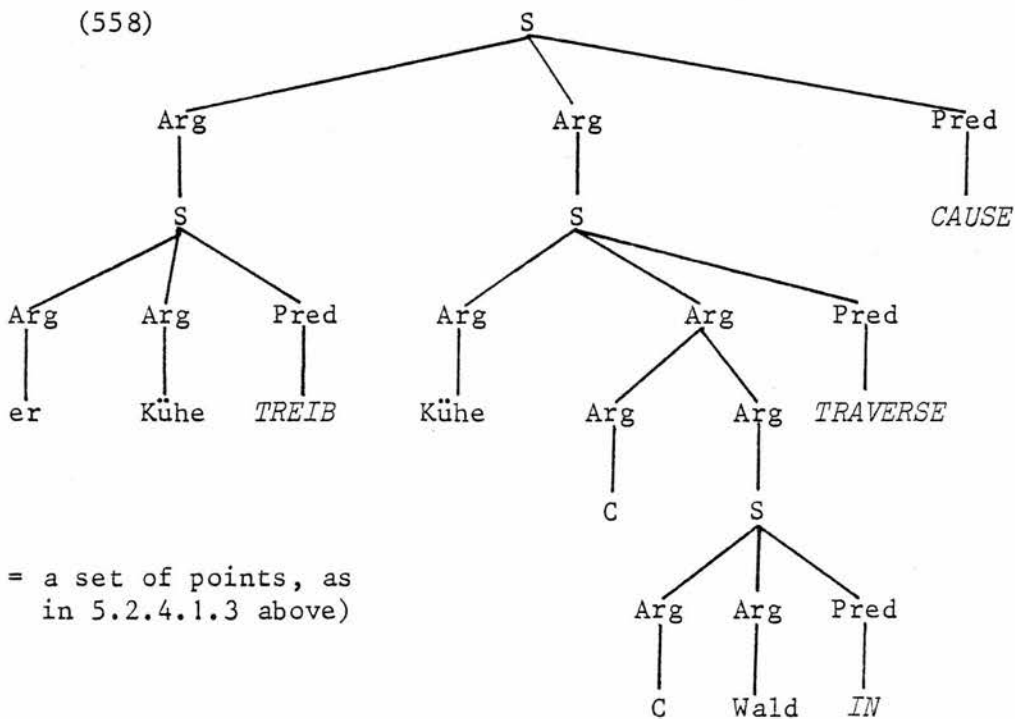
there is no causative predication in the semantic representation; rather the inchoative (*COME ABOUT*) predication is dominated, if at all, only by the predication representing the mode of locomotion, as is shown in (556) overleaf.



V-Comps with path-prepositions are derived, as discussed in 5.2.4.1.3 above, from predications involving the predicate *TRAVERSE*. Where the movement is caused by an outside agent, as in (557):

(557) Er trieb die Kühe durch den Wald.

the *TRAVERSE*-predication is embedded in a causative predication, as in (558):



(C = a set of points, as in 5.2.4.1.3 above)

Where there is no outside agent, as in (559):

(559) Die Kühe irrten durch den Wald.

then the *TRAVERSE*-predication is embedded, if at all, in a 'mode of locomotion' predication.

A similar analysis may be offered for direction V-Comps: the *DIRECTION*-predication (see 5.2.4.1.4 above) is embedded in a causative predication where the movement is instigated by an external agent, as in (560), or by a 'mode of locomotion' predication (optionally) where there is no outside agent, as in (561):

(560) Die Hirten trieben die Kühe nach Norden.

(561) Ich lief meiner Mutter entgegen.

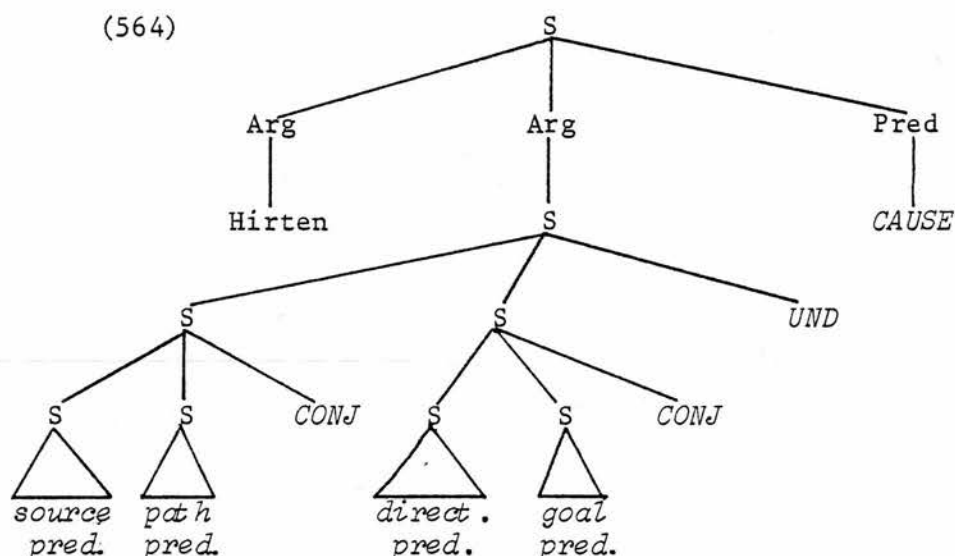
It is possible to combine any, or all, of the non-stative (motional) V-Comps within one clause, as in (562):

(562) Die Hirten trieben die Kühe aus dem Stall über den  
Gutshof nach oben auf die Matte.

Where, as in this sentence, the V-Comps are juxtaposed asyndetically (without any overt connective), they are interpreted as all relating to the same activity, as detailing different aspects of the same movement. This may be formalized in the semantic representation by linking the relevant predications with the operator *CONJ*, as in (554) above. Where a connective does appear in surface structure, as in (563):

(563) Die Hirten trieben die Kühe aus dem Stall über den  
Gutshof und (dann) nach oben auf die Matte.

the situation being described is envisaged as involving two movements, the first from the byre across the farmyard, the second uphill to the pasture. The following schematic representation may illustrate how (563) is to be represented:



It is furthermore possible for V-Comps of the same type to be combined asyndetically. Where two goal-expressions are juxtaposed, as in (565), they relate to the same movement; otherwise, a connective must be interposed in surface structure, as in (566):

(565) Ich fuhr nach Rom zu meiner Mutter.

(566) Ich fuhr nach Rom und (dann) zu meiner Mutter.

Where two or more path-expressions are juxtaposed, as in (567) below, they relate, unlike goal-expressions, to different movements, as is evidenced by the necessity of inserting *und dann*, with no appreciable semantic difference, when there is no co-occurring goal-expression, as in (568):

(567) Er trieb die Kühe über den Gutshof durch den Wald auf die Wiese.

(568) Er trieb die Kühe über den Gutshof und durch den Wald..

(569) <sup>+</sup>Er trieb die Kühe über den Gutshof durch den Wald.

V-Comps of direction frequently combine with deictic direction expressions (*nach oben hinauf*, *nach rechts herüber*): these always relate to the same movement, as is shown by the non-occurrence of <sup>+</sup>*nach oben und hinauf*, <sup>?</sup>*nach rechts und herüber* as paraphrases of these examples. Finally, V-Comps of source may be combined asyndetically, but always to refer to different movements, since no movement may have more than one starting-point:

(570) Er rannte vom Tisch aus dem Haus.

(571) Er rannte vom Tisch und aus dem Haus. (= (570))

### 5.3.3. Postmodifying prepositional phrases

There are certain PPs whose syntactic function is neither that of a V-Comp, in that they do not relate to a surface-structure verb, nor that of a VP-Comp in that they do not take the rest of the sentence as their scope. Consider the PPs in the following sentences:

(572) Das Hotel gegenüber dem Bahnhof gehört meinem Grossvater.

(573) Siehst du das Kind auf der Strasse?

(574) Der Mann mit der Mappe ist der Chef.

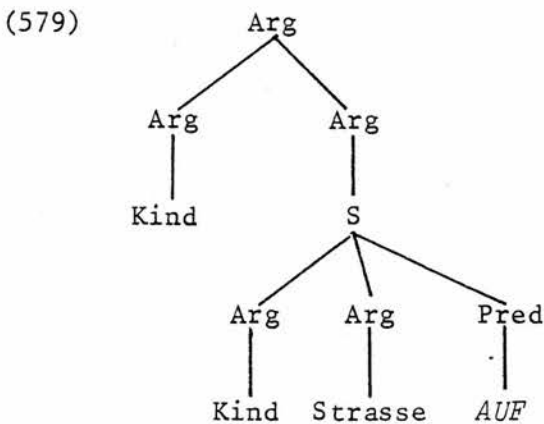
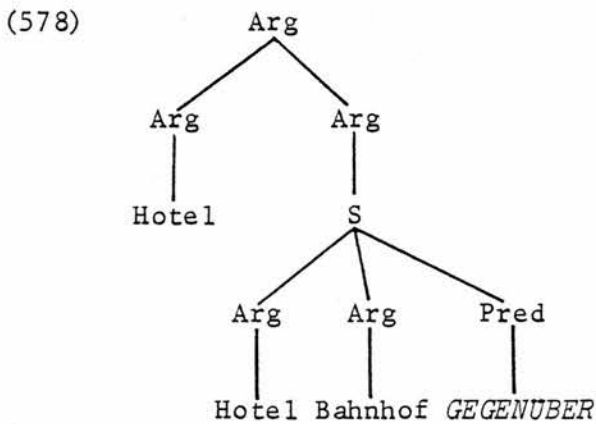
(575) Man baut eine Autobahn nach London.

These PPs combine with an NP to form a larger NP; their semantic

function is to postmodify the noun-phrase with which they combine. In these respects, they resemble relative clauses, and indeed the paraphrase relations between (572) and (576), and between (573) and (577) suggest deriving both from a common source:

(576) Das Hotel, das gegenüber dem Bahnhof steht, gehört meinem Grossvater.

(577) Siehst du das Kind, das sich auf der Strasse befindet?



This analysis is complicated, however, by the fact that regular paraphrases of the type exemplified for (572) and (573) are not always available: corresponding to (574) and (575) respectively, (580) and (581) are unsatisfactory:

(580) ?Der Mann, der mit der Mappe ist, ist der Chef.

(581) <sup>+</sup>Man baut eine Autobahn, die nach London ist/liegt.

More natural paraphrases would be (582) and (583) respectively:

(582) Der Mann, der die Mappe hat/trägt, ist der Chef.

(583) Man baut eine Autobahn, die nach London führt/führen wird.

Thus it would appear from (582) that *mit*, in postmodifying PPs, realizes not only the relation of concomitance, as in (584), paraphrasable as (585), but also the relation of possession.<sup>1</sup>

(584) Der Mann mit Marie heisst Viktor.

(585) Der Mann, der mit Marie ist, heisst Viktor.

Example (575), paraphrased by (583), demonstrates an additional complexity: postmodifying PPs may derive not only from state-predications, with relative-clause paraphrases containing a copular or attitudinal verb, but also from other types of predication, provided that there is no 'mode of locomotion' component. Note, in support of this provision, that (575) could not be derived from (586), which contains an indication of the mode of locomotion, without violating the recoverability of deletion:

1. Whether or not a *MIT*-relation, or some other prepositional relation, underlies verbs of possession (*haben*, *besitzen*, etc.) is an interesting question; for discussion, see Lyons (1968:391 ff.) and Anderson (1971:113 ff.).



(586) Man baut eine Autobahn, die nach London dahineilen wird.

Note also, in this connexion, that postmodifying PPs may not be derived from relative-clause structures where the antecedent refers to an animate moving object: *der Weg nach London*, *der Bus nach London*, <sup>+</sup>*der Mann nach London*, <sup>+</sup>*der Hund nach London*.

#### 5.4. NPs and PPs as 'Satzglieder'

Langacker (1974:645) claims that there is a set of transformational rules whose function is to give greater 'prominence' to the 'objective content' of a sentence, that is, to 'the basic situation which the sentence describes and which the remainder of the sentence takes a position on'; there is, he claims, a 'conspiracy' which ensures that 'objective content will not be too deeply embedded' (1974:655). The rules which convert underlying predications into prepositional phrases may be said to have just that function, in that both VP-Comps and V-Comps have the status of full predications in the semantic representation, but in surface structure play a less 'prominent' role as 'Satzglieder' ('constituents of the sentence'). The notion of 'Satzglied' is defined by Glinz (1957:69) as follows:

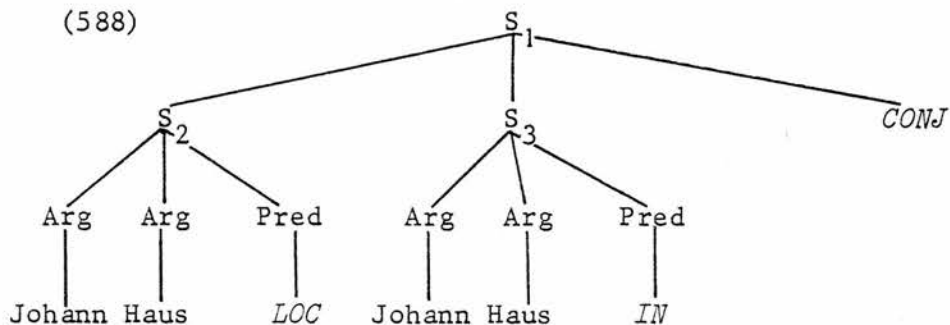
... was für sich verschiebbar ist und nur geschlossen  
verschiebbar ist, erweist sich dadurch, neben den verbalen  
Teilen, als primären Bauteil des Satzes, als 'Satzglied'.

A later definition explicitly excludes verbal elements from Satzglied-status: according to Glinz (1971:40), Satzglieder are 'selbständig und (mit wenigen Ausnahmen) nur geschlossen verschiebbare nicht-verbale

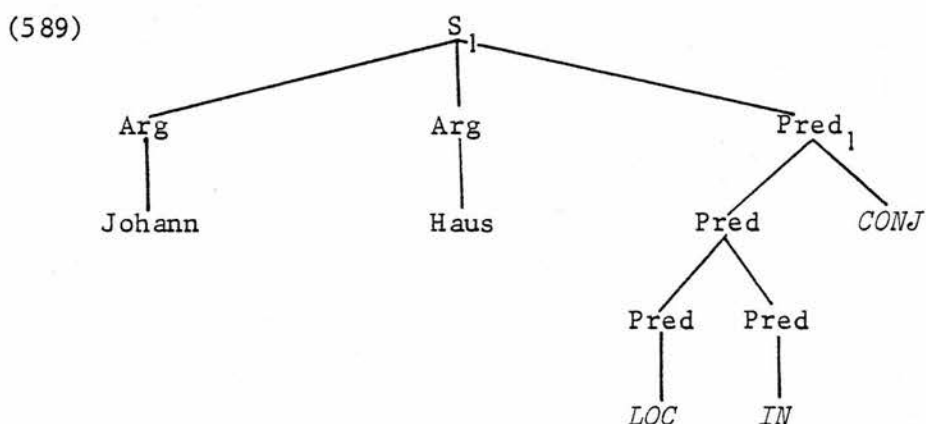
Einheiten'. In terms of transformational grammar, therefore, the Satzglied is any constituent, other than the verb-complex or any part thereof, which is subject in its entirety to movement transformations and out of which no subconstituent may be moved. In as much as V-Comps and VP-Comps, but not postmodifying PPs, may be moved to sentence-initial position, and also no constituent may be moved out of a PP, both V-Comps and VP-Comps qualify as Satzglieder. I wish to suggest that the notion of Satzglied is reflected in a transformational account of the derivation of prepositional phrases in German: the observation, discussed in 3.2.1 above, that movement rules, and the constraints upon their operation, affect NPs and PPs in the same way, may be regarded as reflecting their common status as Satzglieder.

Let us consider, as a simple example of the derivation of the German prepositional phrase, that of (587) from the semantic representation (588) -- again, for ease of exposition, considerations of tense, definiteness, etc. have been ignored:

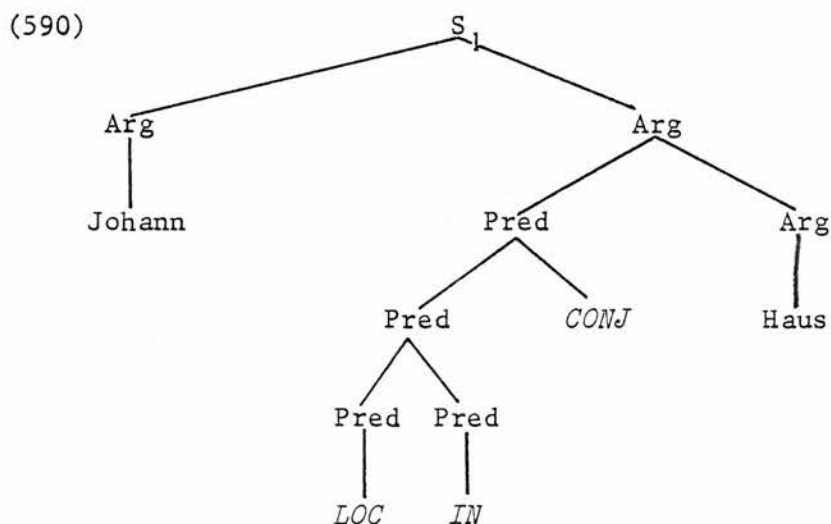
(587) Johann ist im Haus.



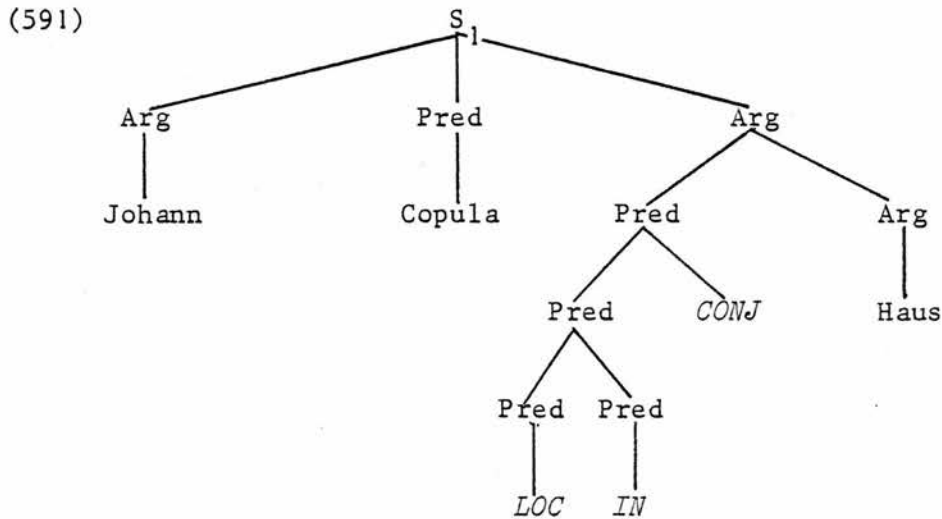
This tree is subject to *Conjunction Reduction*, since the arguments of both conjoined predications  $S_2$  and  $S_3$  are identical, giving (589):



The resulting predicate  $Pred_1$  may be directly lexicalized, for example as the verb *enthalten*, which takes the second argument as its subject. Alternatively, where the predicate is to be realized as a preposition, it is adjoined to the left of the argument *Haus* by means of a transformation to be specified below. The result of this transformation, *PP-formation*, will be the creation of a prepositional phrase which will have, within  $S_1$ , Satzglied-status. If the complex of predicates to be realized as a preposition is Chomsky-adjoined (rather than sister-adjoined) to the argument, so that the entire phrase has the status of an argument in the derived tree, NPs and PPs will be thereby assigned the same category labelling:



It will be clear from (590) that *PP-formation* leaves  $S_1$  without a predicate. A further transformation, *Copula*, which is also operative in the derivation of equative sentences (*Zwei mal zwei ist vier*) and sentences with predicative complements (*Ich bin Student*), ensures that a copular verb is sister-adjoined to the two arguments immediately dominated by the node  $S_1$ :

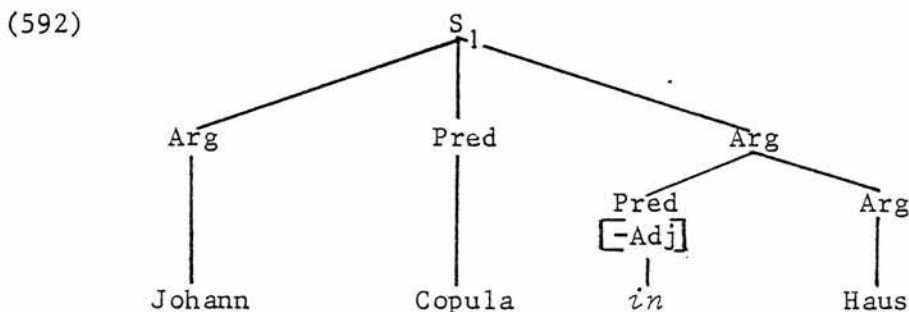


The lexicalization transformations which operate upon the tree in the course of the derivation serve to replace semantic elements, or groupings of semantic elements, with lexical items (in the form of representations that are acceptable input material for the phonological component of the grammar). They should also, I believe, be assigned a second function, namely that of attaching to the category node dominating each element or subtree lexicalized an unordered bundle of features. This feature bundle will determine aspects of the later derivational history of the lexical item and will indicate to which secondary category (in the sense of 0.1.1.1 above) the item belongs. Thus, for example, the transformation introducing the preposition *in* will indicate that the cluster of predicates is lexicalized as *in* only

Lexicalization: in

SD:	X	[ <sub>Arg</sub> [ <sub>Pred</sub> [ <sub>Pred</sub> [ <sub>Pred</sub> <sup>LOC</sup> ][ <sub>Pred</sub> <sup>IN</sup> ]] <sub>CONJ</sub> ]	Arg]	Y
SI:	1	2	3	4
SC:	1	<sup>in</sup> [-Adj]	3	4

(592)  $S_1$



1. By the same token, lexicalization of a predicate by an adjective will be signalled by the attachment of the feature  $\overline{+Adj}$ .

Similarly, the lexicalization transformation for the particle *hinein* will be (ignoring the deictic meaning-component):

*Lexicalization: hinein*

SD:	[ <sub>S</sub> X [ <sub>Arg</sub> [ <sub>Pred</sub> [ <sub>Pred</sub> [ <sub>Pred</sub> <sup>LOC</sup> [ <sub>Pred</sub> <sup>IN</sup> CONJ]]] Y]
SI:	1 2 3
SC:	1 <i>hinein</i> [Adj] 3

Condition: where S is commanded by CAUSE

Further transformations applicable to (592) will not be considered here.

The transformation *PP-formation* mentioned in the discussion of the derivation of (587) may be represented as follows:

*PP-formation*

SD:	Arg	Arg	Pred
SI:	1	2	3
SC:	1	3::2	∅

where :: symbolizes Chomsky-adjunction

This transformation must however be constrained to operate only with certain predicates or complexes of predicates at position 3. Which predicates a language will realize as prepositions is essentially an arbitrary matter, although general patterns of probability may be distinguishable. It has been shown, for example, that there is no German preposition that lexicalizes the same material as English *at*

(5.2.1) and even that there are languages where the category 'preposition' may be very small or even non-existent (4.4 *passim*). It will therefore be necessary to require that the predicate involved in the transformation *PP-formation* be checked against an *ad hoc* list of those predicates which may be realized in contemporary standard German as prepositions. The *ad hoc* nature of the list is justified by the arbitrariness of the phenomenon it is designed to account for.

It is interesting that the operation of the transformation *PP-formation* in the derivation of sentences like (587) appears to run counter to Langacker's (1974) suggestion that all rules which move constituents to any other than clause-initial position bring the objective content of the sentence into prominence. In as much as the locative predicate is more deeply embedded than the 'meaningless' copula, the rule appears rather to downgrade the objective content. However, the joint operation of *PP-formation* and *PP-lowering*<sup>1</sup> involved in the derivation of such sentences as (520), repeated here for convenience:

(520) Auf der Strasse sah ich die Kinder.

does indeed increase the prominence of the objective content ('I saw the children'); in (520), the prepositional phrase has a subsidiary, 'situating' function. Nevertheless, the predication realized as the PP dominates the 'main predication' in underlying structure. Consider the first steps in the derivation of (520) from (522), repeated overleaf for convenience:

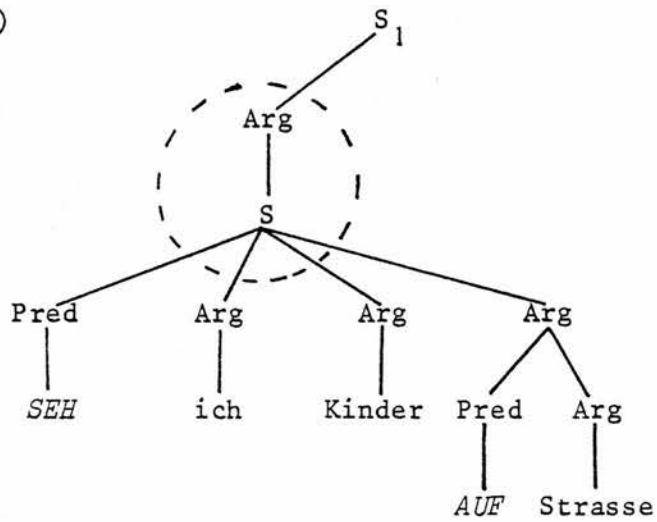
1. This transformation will be formulated below.





The output is the following tree, which may be simplified by means of the 'tree-pruning convention':

(593)



## CHAPTER VI

### CONCLUSIONS

On the basis of the preceding discussion, it is possible to formulate a number of conclusions relating to the status of the prepositional phrase in a transformational grammar of German. Neither 'preposition' nor 'prepositional phrase' is recognized as a primary category, in the sense of 0.1.1.1 above; in semantic structure, the only categories are S, Pred and Arg. 'Preposition' and 'prepositional phrase' may, however, be used to refer to certain configurations of surface structure, which has no more categories than semantic structure, given that lexicalization transformations receive, as proposed in 5.4 above, the additional function of appending features to categorial nodes. A preposition is thus any  $\begin{smallmatrix} \text{Pred} \\ [-\text{Adj}] \end{smallmatrix}$  immediately dominated by Arg and possessing a non-propositional sister-node Arg (i.e. one which does not dominate exclusively S). A prepositional phrase is an Arg immediately dominating  $\begin{smallmatrix} \text{Pred} \\ [-\text{Adj}] \end{smallmatrix}$  and a non-propositional Arg: the relative ordering of  $\begin{smallmatrix} \text{Pred} \\ [-\text{Adj}] \end{smallmatrix}$  and Arg is immaterial, since a  $\begin{smallmatrix} \text{Pred} \\ [-\text{Adj}] \end{smallmatrix}$  which precedes Arg will be a 'preposition' (in the narrow sense) and one which follows Arg will be a 'postposition'.

A prepositional phrase will qualify as a Satzglied if and only if it is immediately dominated by the highest S of surface structure; thus both V-Comps and VP-Comps, but not postmodifying PPs, qualify as Satzglieder. V-Comps and VP-Comps, both being immediately dominated by S, are indistinguishable in surface structure but distinct in

semantic structure: the former originate in predications commanded by the predicate realized as the main verb of surface structure, and the latter in predications superordinate to that predicate. The unmarked relative ordering of adverbials in surface structure is imposed by a surface-structure constraint of the type proposed in 5.3.1; this constraint is sensitive to the 'meaning' (in Fillmore's terms, the case) of these adverbials and not to their status as V-Comps or VP-Comps, which is irrelevant for matters of ordering.

These, then, are the major conclusions of this study. It must be left to future research to determine whether, as would be predicted by the 'localist hypothesis' (cf. 5.2 above), types of adverbial other than spatial prepositional phrases may be generated by means of analogous rules, and also whether the principles proposed here are applicable without excessive modification to the description of prepositional phrases in languages whose structure appears to differ markedly from that of contemporary standard German.

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